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ABSTRACT

This document, the first of three reports to be produced as part of the National Assessment of Chapter 1 programs, summarizes a wide range of information about those whom the programs are intended to benefit. The report provides an analytic and demographic framework from which to view the actual operations of local Chapter 1 programs. The first section provides an overview of the report. Chapter 2 examines a number of aspects of the relationship between poverty and achievement. Chapter 3 describes characteristics of children whose families meet the official census definition of poverty, as well as those who experience long spells of poverty, those who live in areas with high concentrations of poverty, and students who are not high achievers in school. Chapter 4 examines characteristics of those students who actually have been served by Title I or Chapter 1 programs. Appendices include: (1) the statute for the National Assessment of Chapter 1; (2) a list of contracted studies on Chapter 1; (3) the Administrative Status Report of the National Assessment; (4) two reports on the effects of poverty on student attainment; (5) two statistical reports based on the Current Population Survey and the 1980 Census; and (6) three reports providing data on participants in Title I/Chapter 1 programs. (MW)

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# POVERTY, ACHIEVEMENT AND THE DISTRIBUTION OF COMPENSATORY EDUCATION SERVICES

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**NATIONAL ASSESSMENT OF CHAPTER 1 • 1986**

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# POVERTY, ACHIEVEMENT AND THE DISTRIBUTION OF COMPENSATORY EDUCATION SERVICES

by

Mary M. Kennedy

Richard K. Jung

Martin E. Orland

With Assistance from

David Myers, Decision Resources Corp.

Steven Chaikind, Decision Resources Corp.

Ming-Mei Wang, University of Iowa

James L. Peterson, Child Trends, Inc.

Myron Schwartz, Decision Resources Corp.

Ann Milne, Decision Resources Corp.

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# PREFACE

The National Assessment of Chapter 1, of which this report is a part, was mandated by Congress in December 1983. The mandate, included in the Technical Amendments to the Education Consolidation and Improvement Act (ECIA) of 1981, required the National Institute of Education (NIE)* to conduct independent studies and analyses, and to report the findings to Congress by January 1987. Findings were to address the following topics:

- services delivered;
- recipients of services;
- background and training of teachers and staff;
- allocation of funds (to school sites);
- coordination with other programs;
- effectiveness of programs on student's basic and higher order academic skills, school attendance, and future education; and
- a national profile of the way in which local educational agencies implement activities described under Section 556(b) of Chapter 1.

The mandate also required NIE to consult with relevant members of the House and Senate education committees. The mandate is reproduced here in Appendix A.

NIE developed a three-part response to the required National Assessment. First, NIE consulted with Congress about the study's purposes and objectives, and also discussed the study with a wide range of people who were expected to take an interest in the forthcoming reauthorization of Chapter 1. Those consulted included not only Congressional staff, but also staff of the U.S. Department of Education, the Office of Management and Budget, the Congressional Research Service, the Congressional Budget Office, and representatives from a variety of associations and other groups interested in Federal education legislation. Second, based on these conversations, NIE developed a Study Plan and presented it to the staff of both House and Senate education committees. Third, NIE formed a Study Team to develop and oversee the many studies and analyses which contribute to the National Assessment.

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* On October 1, 1985, NIE was reorganized into the Office of Educational Research and Improvement. For editorial consistency, we refer to the agency by its original title.

This is the second occasion on which Congress has required NIE to study this important education program. The first study was mandated by the Education Amendments of 1974. Findings from the resulting NIE "Compensatory Education Study" contributed to the formulation of the 1978 reauthorization to Chapter 1's predecessor, Title I of the Elementary and Secondary Education Act (ESEA).

Since 1978, however, Federal compensatory education legislation has experienced two further changes. First, in 1981 Title I of ESEA was superseded by Chapter 1 of ECIA, an act designed to consolidate and streamline a number of Federal education programs and to reduce the burden experienced locally in administering these programs. Chapter 1 of ECIA retains the same basic purposes as Title I of ESEA, but changes a number of administrative aspects of the program. Second, in 1983 technical amendments to ECIA were passed. These amendments were designed to clarify ambiguities that became apparent as State and local agencies began to implement Chapter 1 and restore some Title I provisions that were omitted when Chapter 1 was first enacted.

These legislative changes were largely responsible for Congress' decision to require a second major assessment of the program. The current National Assessment is characterized by two unique features.

First, it is designed to give Congress information on current practices under Chapter 1 and to show, to the extent possible, how these differ from practices observed under Title I of ESEA, as well as how these practices are influenced by Federal rules and oversight. The National Assessment's final report will describe:

- The quantity and characteristics of services being provided;
- How school districts select schools and students to participate in the program, and the net effect of those decisions;
- How programs are designed and how funds are allocated among schools; and
- How programs are administered at each level of government.

Second, the National Assessment draws on knowledge generated from a variety of sources, organizing and synthesizing this knowledge with an eye toward its relevance to Chapter 1. This use of existing data is appropriate for two reasons. First, many of Congress' questions have to do with the differences in practice between Title I, ESEA and Chapter 1, ECIA. Data gathered at earlier times provide valuable information about how compensatory education services were provided under Title I. Second, many of the data files compiled over the past decade have not been analyzed to the full extent possible. They offer a cost-effective means of addressing questions that have not been addressed before.

The National Assessment is providing Congress with two interim reports in addition to its final report, and both rely heavily on these existing data. This first interim report summarizes available information about the population of students whom Chapter 1 is intended to serve -- educationally deprived students residing in areas with high concentrations of children from low-income families. A second interim report, to be delivered in July 1986, will describe current knowledge about what constitutes effective compensatory education practice. These two interim reports are intended to provide policy makers with a broad perspective from which to view the actual Chapter 1 program practices which will be described and analyzed in the final National Assessment report, scheduled for January 1987.

NIE's Chapter 1 Study Team began to implement the National Assessment in the Fall of 1984, after the Study Plan had been reviewed by Congressional staff members in both the Senate and House education committees. The Study Team awarded several contracts for portions of the work, and these are listed in Appendix B. Appendix C reports the administrative status of the National Assessment. Responsibilities for the several components of the National Assessment are distributed among members of the Study Team. Mary Kennedy, Richard Jung and Martin Orland had primary responsibility for the first interim report and Mary Kennedy and Randy Demaline will take the lead in the second interim report. Beatrice Birman, who will take over the duties of Director, will oversee the third and final report with the sections within it being distributed as follows: Richard Jung is responsible for describing the characteristics of program recipients and patterns of their participation, Gilbert Garcia for describing services, Randy Demaline for analyzing links between services and effective practices, Ron Anson for describing district-level decisions about the program, Martin Orland for analyzing administrative practices and Ron Anson and Richard Jung for analyzing patterns of change from Title I to Chapter 1. Paige Russ has primary responsibility for typing these reports.

Mary Kennedy, Director
National Assessment of the Chapter 1 Program

Beatrice Birman, Deputy Director
National Assessment of the Chapter 1 Program

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# Chapter 1
# Introduction

This is the first of three reports to be produced as part of the National Assessment of Chapter 1. It responds to the statutory requirement that an interim report be provided to Congress in January 1986, and is designed to provide policy makers with a demographic perspective from which to view Chapter 1. It summarizes a wide range of information about those members of the population whom Chapter 1 is intended to benefit. A second interim report, to be provided in July 1986, will summarize available information about the effectiveness of Chapter 1 and other compensatory education services. The final report from the National Assessment, to be submitted a year from now, will describe the current operation of the program -- how students are selected to receive services, what services are provided to them, how programs are designed and resources allocated, and how programs are administered.

## Chapter 1 Programs

Chapter 1 programs, so named because they are authorized by Chapter 1 of the Education Consolidation and Improvement Act of 1981 (ECIA), receive the largest share of Federal assistance for elementary and secondary students. Funded at over $3 billion annually, Chapter 1 constituted roughly 21 percent of the U.S. Department of Education's FY 1985 budget. Since the passage of ESEA, Title I, 20 years ago, Federal investments for this program and its successor, Chapter 1 of ECIA, have totaled over $45 billion.

Chapter 1 supersedes Title I of the Elementary and Secondary Education Act of 1965 (ESEA), but it retains the same basic purposes as Title I. The purpose of Chapter 1 is "to continue to provide financial assistance to State and local educational agencies to meet the special needs of educationally deprived children, on the basis of entitlements calculated under Title I of the Elementary and Secondary Education Act of 1965..."[1]

Like its predecessor, Title I of ESEA, Chapter 1 is based on the premise that poverty and school achievement are related; that children living in poor households or in poor neighborhoods are more likely to have difficulty in school. Consequently they are more likely to need extra help to compensate for the effects that an impoverished environment has had on their learning. Section 552 of Chapter 1 states that "the Congress recognizes the special educational needs of children of low-income families, and that concentrations of such children in local educational agencies adversely affect [the educational agencies'] ability to provide educational programs which will meet the needs of such children."[2]

In keeping with this premise, the legislation allocates funds primarily on the basis of the number of school-age students from low-income families who reside in school districts.[3] Districts, in turn, must select schools to participate mainly on the basis of the low-income students residing in their boundaries.[4] After services have been established in schools, the particular students to be served within the chosen schools must be selected on the basis of their educational need, rather than on the basis of their family's poverty.

## Defining Intended Beneficiaries

Since the program's inception, policy makers have debated over who should be eligible to receive compensatory educational assistance. For

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some, the program was to focus on poor students, regardless of their educational achievement; for others it was to focus on low-achieving students regardless of their family's income. Questions regarding who should benefit from compensatory education took on so much importance in the mid-seventies that the National Institute of Education (NIE) devoted an entire volume of its final report to Congress to that topic.[5] At that time, Congress was considering the possibility of allocating funds to districts and schools, as well as to students, on the basis of achievement. When reauthorizing Title I in 1978, Congress decided to continue allocating funds to districts and schools on the basis of poverty rates, in part because of the dubious feasibility of implementing an achievement criterion and in part because achievement criteria would effectively reward those school districts which had large numbers of low-achieving students, thus perhaps encouraging them to teach their students less rather than more. However, Congress retained the provision requiring individual students to be selected on the basis of their educational achievement.

As part of that first Congressionally-mandated study of compensatory education, NIE also found that family poverty was in fact related to students' educational achievement. Generally speaking, a youngster's chances of doing well in school were diminished if he or she came from a poor family. The association between family poverty and student achievement was not especially strong, however. There were still many poor youngsters who did well in school, and many low-achievers who were not poor. On the other hand, when looking at schools rather than individual children within the schools, the association was much stronger: schools with large proportions of poor students were far more likely to exhibit lower average achievement scores than other schools.[6] This latter finding is important, given the program's requirement that schools be selected on the basis of the number of children from low-income families who reside in their attendance areas. A rather large body of research now exists confirming these findings: poverty and achievement are related both among individuals and among schools, but they are much more related among schools than among individual students.[7]

The population of intended beneficiaries for this program is often referred to as educationally deprived. Not all educationally-deprived children are eligible for the program, however, because services are not provided in all schools or grade levels. To be eligible, a child must first reside in an eligible school attendance area -- usually an area with more poor students than the district's average. If the child's school is selected to operate a Chapter 1 program, the child will only be selected to participate if he or she is enrolled in one of the grade levels in which the program operates, and scores below a specified performance level on an achievement test. Thus, the child who participates is one who meets several criteria, some of which relate to circumstances, while others relate to ability or need. Because of this sequential procedure for identifying potential Chapter 1 beneficiaries, and because decisions regarding the selection of schools, grade levels, and individual students are dependent on local demographic characteristics and purposeful local policy, it is not possible to estimate the national need for this program by applying a preconceived definition of "educational deprivation" to students nationwide. In this regard, Chapter 1 differs significantly from programs such as bilingual education or special education for which it is possible, at least in principle, to estimate the total number of eligible children nationwide.

Despite these definitional problems, concerned policy makers need to know how well the program is achieving its purposes, and one of those purposes is to meet the special needs of educationally-deprived children. Consequently, policy makers often ask such questions as how many eligible students there are, how many of them receive services, and are there ineligible students receiving services. Yet because student participation depends on a series of decisions made by school districts, students who participate may not be those who are the most educationally-deprived. Questions regarding how well Chapter 1 achieves its purposes may be better informed by an examination of educationally-deprived children than by an examination of eligible children.

## Purpose of this Report

Rather than restrict itself to students who are eligible for services, this interim report from the National Assessment of Chapter 1 first examines all students who could be or have been called "educationally deprived" -- students who are either poor or low-achieving, without regard to their residence or grade level. Only after this examination does the report focus on students who are eligible for Chapter 1 and those who actually receive compensatory education services. The report is an interim report, and is intended to provide an analytic and a demographic framework from which to view the actual operations of local Chapter 1 programs. The final report from the National Assessment, to be provided in January 1987, will describe how school districts select schools and students to participate in their Chapter 1 programs, the characteristics of the schools and students actually served by the program, and how Chapter 1 students differ from other students. It is our hope that the findings described in the final report, regarding school and student selection practices, can be judged at least in part on the basis of findings described here about the characteristics of educationally-deprived students.

## Overview of the Findings

In chapter 2 we examine a number of aspects of the relationship between poverty and achievement. We use two definitions of poverty: the length of time the student's family has been poor and the proportion of poor children attending a student's school. Research has already shown that the families' official poverty status is only weakly related to student achievement. We find that other measures of poverty, which take into account the intensity of the poverty experience for the child, are more strongly related to educational outcomes. These measures include the length of time the child spends in poverty and the concentration of poor children attending the child's school. We find that students are increasingly likely to fall behind grade levels as their families experience longer spells of poverty, and that achievement scores of all students -- not just poor students -- decline as the proportion of poor students in a school increases.

These findings are reasonably consistent with the Chapter 1 provisions. Measures of poverty concentration appear to be good predictors of average student achievement, and Chapter 1 requires districts to use such measures when they select schools to participate in the program. We also know that individual family poverty status, which does not take into account the length of time a family has been poor, is a relatively weak predictor of individual student achievement. The Chapter 1 provisions accommodate this fact by requiring districts to use measures of

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achievement, rather than poverty, when selecting individual students to participate in the program.

Chapter 1 legislation, however, relies on official census counts of poverty to allocate funds among counties. In chapter 3, we describe the characteristics of children whose families meet the official census definition of poverty as well as those who experience long spells of poverty and those who live in areas with high concentrations of poverty. We also examine students who are not achieving well in school. These analyses rely on separate data bases, so that it is difficult to tell the extent to which the same students are being identified by all the analyses. There is evidence that about 75 percent of non-elderly adults counted as poor by the census are experiencing medium- to long-term spells of poverty. The remaining 25 percent counted by the census are likely to be experiencing poverty spells of three years or less. With regard to the two measures of intensity of poverty experiences, children who experience long-term family poverty and children who live in areas with high concentrations of poverty are more likely to belong to minority groups, more likely to live in the Southeast, and more likely to live in small rural areas. Those residing in areas with high concentrations of poverty are also more likely to reside in large urban areas, a characteristic not reported by researchers investigating long-term family poverty. We also find that children who lack reading proficiency are more likely to be minorities, to live in rural areas or in large urban areas, and to have less-educated parents.

The preponderance of Black children, and minority children in general, among those experiencing long-term family poverty and concentrations of poverty in their communities suggests that minorities may be experiencing a qualitatively different form of poverty than other poor children experience. Their families are likely to be poor for longer periods of time, and their communities are more likely to have a preponderance of poor people. To the extent that students experiencing these intense forms of poverty live in different communities from other poor students, the census counts of poverty may under-estimate the incidence of low achievement in these communities.

In chapter 4, we examine the characteristics of those students who actually have been served by Title I or Chapter 1 programs. Relative to the population of school-age children, Title I/Chapter 1 students are more likely to be poor, to belong to minority groups, to be enrolled in elementary grades, and to attend public rather than private schools. With regard to their achievement levels, findings presented in this chapter suggest that the provisions regarding the selection of schools and students do not always assure that the most educationally-deprived students will be served. Nearly 20 percent of students receiving math instruction in 1976 achieved above the 50th percentile on a math achievement test, and over 10 percent of those receiving reading instruction achieved above that level on a reading test. Yet some 60 percent of students scoring below the 25th percentile were not receiving services.

The proportion of such less-low-achieving students being provided with compensatory education services depends in part on the population of low-achieving students available to be served by the school, and in part on the local decision to serve many versus a few children. Schools with fewer lower-achieving students are more likely to serve relatively more higher-achieving students, and schools with relatively large programs are more likely to serve higher-achieving students, unless they have very high concentrations of poor students.

Though the data on which these analyses are based are old, more recent data sources indicate that similar patterns of achievement levels exist among Chapter 1 students today, and will probably continue to exist in the future unless Congress decides to restrict program participation in some way.

## Notes to
## Chapter 1

1. Section 552, Education Consolidation and Improvement Act, 1981.

2. In addition to the funds it provides to local educational agencies to serve these youngsters, Chapter 1 authorizes funds for state educational agencies to cover administrative costs, and it authorizes funds for services to three other special populations: certain handicapped youngsters, neglected or delinquent youth, and the children of migrant workers. The National Assessment, however, focuses on the central portion of Chapter 1 program: grants to local educational agencies.

3. Allocations also take into account the number of children living in institutions for neglected and delinquent children, or being supported in foster homes with public funds, if these children are not already counted under the separate allocation for programs operated by State agencies for neglected and delinquent children.

4. School districts have a number of options for identifying eligible attendance areas. They may use either the number or the percent of students from low-income families, or a combination of these measures. In addition, they may include all of their schools if their attendance areas do not differ substantially in their concentrations of poor children, and they may include all attendance areas in which at least 25 percent of the students are from low-income families. Finally, a school may be eligible if it was eligible in either of the two preceding years.

5. National Institute of Education, Using Achievement Scores to Allocate Title I Funds. Washington, DC: U.S. Department of Health, Education and Welfare, 1977.

6. A. Wolf, "The Relationship Between Poverty and Achievement." Occasional paper produced by the Compensatory Education Study Group, National Institute of Education, 1977.

7. For a review of these findings, See Karl R. White, "The Relationship Between Socioeconomic Status and Academic Achievement," Psychological Bulletin, 91(3), 1982: 461-481.

# Chapter 2
# The Relationship Between Poverty and Achievement

## Overview of the Chapter

The Chapter 1 legislation assumes a relationship between poverty and educational achievement, at least in the aggregate. Its funding formula relies on census counts of poor school-age children to allocate funds among counties, and its provisions regarding the selection of schools generally limit services to those schools with the highest concentration of children from low-income families. Research has already shown that the families' official poverty status is only weakly related to student achievement. However, we find that:

- Other measures of poverty, which take into account the intensity of the poverty experience for the child, are related to educational outcomes. These measures include the length of time the child spends in poverty and the concentration of poor children attending the child's school.
- Students are increasingly likely to fall behind grade level as their families experienced longer spells of poverty, and that achievement scores of all students -- not just poor students -- decline as the proportion of poor students in a school increases.

These findings are reasonably consistent with the Chapter 1 provisions. Measures of poverty concentration appear to be good predictors of average student achievement, and Chapter 1 requires districts to use such measures when they select schools to participate in the program. We also know that individual family poverty status, which does not take into account the length of time a family has been poor, is a relatively weak predictor of individual student achievement. The Chapter 1 provisions accommodate this fact by requiring districts to use measures of achievement, rather than poverty, when selecting individual students to participate in their programs.

## Background

Following President Johnson's War on Poverty and throughout the 1970s, educational researchers devoted a great deal of attention to issues of poverty and socioeconomic status, and to how these were associated with students' educational achievement. The research yielded two important findings. First, family income is more strongly associated with student achievement than are other measures of social status such as parents' education or occupation.[1] However, even family income is not especially strongly associated with student achievement.

Second, measures of home atmosphere are more strongly associated with student achievement than any measures of social status, including family income.[2] "Home atmosphere" includes such aspects of family life as the amount of cultural activities in which the family participates, the amount of reading material in the home, parents' aspirations for their children, family stability, and family attitudes toward education. These family characteristics can occur in any family, regardless of its income, though it is possible that they occur less often in low-income families.

Finally, the association between poverty and achievement in schools -- that is, between the average achievement in a school and the average family income among students attending the school -- is much higher than the relationship between poverty and achievement among individual students.

These findings are pertinent to Chapter 1 in several respects. Since its inception, Title I's funding formula and school selection provisions have focused on children from low-income families. Funds are allocated to school districts primarily on the basis of the number of poor school-age youngsters residing in their boundaries, and districts are required in turn to place their Chapter 1 programs in those schools with the largest

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concentrations of poor children. The allocation formula assumes that the percent of families living below the poverty threshhold is a reasonably good indicator of achievement needs in districts, yet research has shown that the association between family poverty and student achievement is not particularly strong. On the other hand, the association between school poverty rates and average achievement in schools is strong. The requirement to place the program only in schools with high concentrations of poor students, rather than serving all poor or low-achieving children regardless of their residence, is consistent with the finding that the presence of large proportions of poor students in schools increases the extent of educational need in these schools.

Finally, the fact that aspects of home atmosphere are more strongly associated with student achievement than are such demographic measures as family income, occupation, or education bears on Chapter 1 since aspects of home atmosphere have never been incorporated into fund allocation or school or student selection procedures, and probably could not be without violating family privacy.

But while the research conducted over the past two decades has shed considerable light on the relationship between demographic characteristics and student achievement, it was also limited in several respects. One of the chief limitations was that, in most cases, poverty and achievement were both measured at the same time, so that researchers could not ascertain the dynamic relationship between the two. A second problem with many studies was that they were unable to disentangle the statistical relationships that existed among individuals from those that existed among groups of individuals attending schools. Indeed, many investigators assumed that the relationship observed among schools was a statistical artifact, not a real phenomenon.[3]

In this chapter, we further extend this research regarding poverty and student achievement. Our purpose is not to identify the causes of low achievement among students, but rather to determine how well low-achieving students can be identified using information about poverty. We do not include, for instance, measures of home atmosphere that have been found to be associated with achievement, even though these are useful in speculating about the reasons for low achievement, because such measures are not included in most data bases and they are not useful as predictors of low achievement rates in school districts.

We use two definitions of poverty, each of which is intended to reflect the intensity of the child's poverty experience. First, we examine the relationship between the length of time families live in poverty, and the educational progress of students living in these families. Analyses such as this have not been undertaken before, in part because data on the length of time families spent in poverty were not available. Second, we examine the relationship between the concentration of poverty in schools, average achievement levels in schools, and growth in achievement over time. In these analyses we attempt to correct the statistical problems often associated with aggregate data, and determine whether there is a relationship between average school achievement and school poverty rates, even after taking into account the relationship between individual family characteristics and student achievement.

These two definitions of poverty -- length of time in poverty and concentrations of poverty -- provide ways of estimating the intensity of the poverty experience for the child. That is, the child whose family lives in poverty for several years experiences a more intense form of poverty than the child whose family may be poor for only a brief period. Similarly, the child who is surrounded by poor families and attends school with a large number of poor children experiences a more intense form of poverty than do children who attend schools with relatively few poor students.

## Length of Time Living in Poverty

The official poverty status of a family is one of a number of family characteristics associated with student achievement. However, it is not the most frequently associated nor necessarily the most strongly associated with student achievement. The uneven association between this measure of family poverty and student achievement could result from the fact that families differ considerably in the reasons they are poor and in the length of time they are poor. Some families may be poor only for a month or two, because of illness or a brief hiatus between jobs, while others may spend many years in poverty. A family's official poverty status -- poor versus non-poor -- does not reflect these dynamic aspects of poverty. The data that come closest to addressing the relationship between student achievement and length of time in poverty were produced by the University of Michigan's Institute for Social Research. Since 1968, this group has been following 5000 families and documented both their income and other circumstances about them each year. Because the primary purpose for the Panel Survey on Income Dynamics (PSID) was to learn more about family economics and labor market participation, very few data were gathered regarding the education of these families' children. However, between 1978 and 1983, families were asked to report the grade levels attained by their 16- to 18-year-old youngsters. From the responses to this question, we determined which students were attending school at the grade level expected for students their age and which students were behind that grade level.

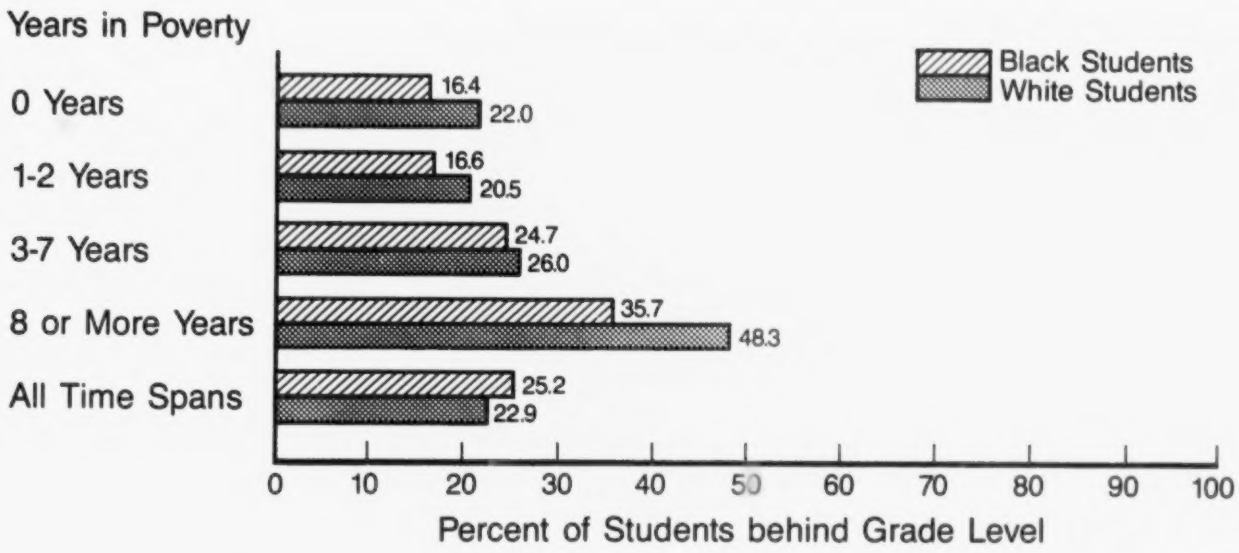
Most 16-year-olds are expected to be in the tenth grade, and most 18-year-olds in the twelfth grade. Figure 2.1 shows the proportion of 16-year-olds and 18-year-olds participating in the PSID who were below these grades when their families had experienced poverty for different lengths of time. The proportion behind grade level increased substantially as the number of years in poverty increased. And the relationship between time-in-poverty and falling-behind-grade-level is similar among both White and Black students. The specific proportions differ somewhat -- not enough to be statistically significant -- but the patterns are the same: both groups show larger proportions behind grade level as their length of time in poverty increases. Further, within those families who were poor for longer periods of time, the proportion of students who were behind was higher among 18-year-olds than among 16-year-olds.[4] It is reasonable to suppose that some of these older students are actually dropouts, since they have surpassed the age of mandatory schooling.

To accommodate the relationships between length of time in poverty and other family characteristics, we assessed the relationship between the length of time students spent in poverty and their grade attainments after accounting for other aspects of the students' background. The details of this analysis are presented in Appendix D.

Figure 2.1

## PERCENT OF STUDENTS BELOW EXPECTED GRADE LEVEL, BY YEARS IN POVERTY

**16 YEAR OLDS**



**18 YEAR OLDS**

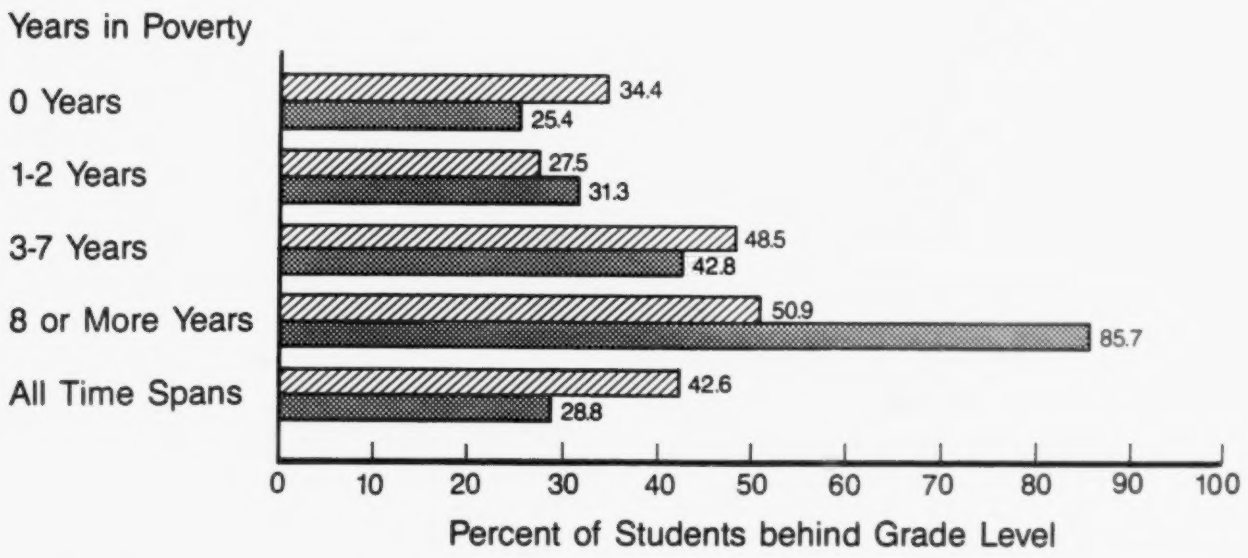


FIGURE READS: "Among all Black students who spent 0 years in poverty, 16.4 percent were behind grade level at age 16; among all White students, 22.0 percent were behind grade level at age 16."

SOURCE: Reanalyses of Panel Study of Income Dynamics (Appendix D, Part 1, Table 3).

Table 2.1 summarizes the findings. The analysis indicates that the number of years in poverty was still strongly associated with the students' educational attainment even after taking into account such important characteristics as mother's education, mother's age when the student was born, race, and even average family income for the period. Table 2.1 indicates, for instance, that the mothers' attendance at a Parent-Teacher Association (PTA) meeting when these students were in elementary school is associated with the students' eventual grade attainment. This measure is reminiscent of measures of "home atmosphere" referred to earlier. The fact that these mothers attended even one PTA meeting probably indicates an interest in their children's education, one which would also be reflected in a number of other features of home atmosphere. In this case, when the students were still in early elementary school, the PSID interviewers had asked their mothers whether they (the mothers) had ever attended a PTA meeting, and we now find that their responses to this question are significantly related to their childrens' grade attainments several years later.

Table 2.1 also shows that average family income over time -- as opposed to the number of years spent below the poverty line -- was significantly associated with the student's grade attainment. Yet, even after average income was taken into account, the number of years in poverty was still significantly associated with the students' grade attainment. To some extent, even though both of these are measures of poverty, they measure different aspects of poverty, for each has its own independent relationship with students' educational attainment.

## Table 2.1

### Relationships Between Student and Family Characteristics and Falling Behind Grade Level (16- and 18-Year-Old Students)

| These Student or Family Characteristics[a] | Are Associated with These Changes in the Likelihood of Falling Behind Grade Level[b] |
|---|---|
| Gender (Being Male) | Increases likelihood by 14 percentage points |
| Mother Did Not Finish High School | Increases likelihood by 6 percentage points |
| Mother Attended a PTA Meeting While Student Was in Elementary School | Decreases likelihood by 10 percentage points |
| Average Family Income During the 15-year Period of the Study | Decreases likelihood by 4 percentage points per thousand dollars of income |
| Number of Years Living Below Official Poverty Line | Increases likelihood by 2 percentage points per year in poverty |

Number of students in analysis: 1,380

TABLE READS: "On average, boys are 14 percent more likely than girls to be behind grade level when they are 16 to 18 years old."

SOURCE: Reanalyses of Panel Survey of Income Dynamics data (Appendix D, Part 1, Table 3, Model 1).

[a] Characteristics tested but found unrelated to students falling behind grade level were:

- Whether the student was Black.
- Whether the family lived in the South.
- Whether the mother was less than 20 years old when the student was born.
- Whether the mother was single at any time during the PSID study.

[b] Nationwide average proportion of students behind grade level is 23.9 percent of 16-year-olds and 32.0 percent of 18-year-olds.

Of particular importance is the finding that the length of time the family was poor was related to the students' likelihood of falling behind grade level. The likelihood of falling behind increased by 2 percentage points per year spent living in poverty. Thus, the student whose family has been poor for 10 years is 20 percent more likely to be behind than the student whose family is officially poor this year. Thus the intensity of the student's poverty experience, as measured by the length of time he or she spends in poverty, may be a better predictor of the students educational status than is the one-time poverty status measured by the census.[5]

## Concentrations of Poverty in Schools

Chapter 1 requires school districts to place their programs mainly in schools with above-average concentrations of poor students. Consequently we also assessed the relationship between average achievement levels in schools and poverty concentrations in schools.

Figure 2.2 shows the proportion of elementary students whose achievement scores fell at or below the twenty-fifth percentile rank, depending on the proportion of poor students in their schools, and depending on whether their own families were poor.[6] The lowest bar indicates the proportion of students in the total study sample whose achievement scores fell below the 25th percentile. It is, as one would expect, 25 percent. The remaining bars indicate the proportion of different subgroups of students whose scores fell below the twenty-fifth percentile. Nationwide, a greater proportion of poor students were low-achievers than were non-poor students (46.7 percent versus 18.7 percent). Also, schools serving high concentrations of poor students had

Figure 2.2

## PERCENT OF STUDENTS WHOSE ACHIEVEMENT SCORES FALL AT OR BELOW THE 25TH PERCENTILE RANK BY STUDENT AND SCHOOL POVERTY STATUS

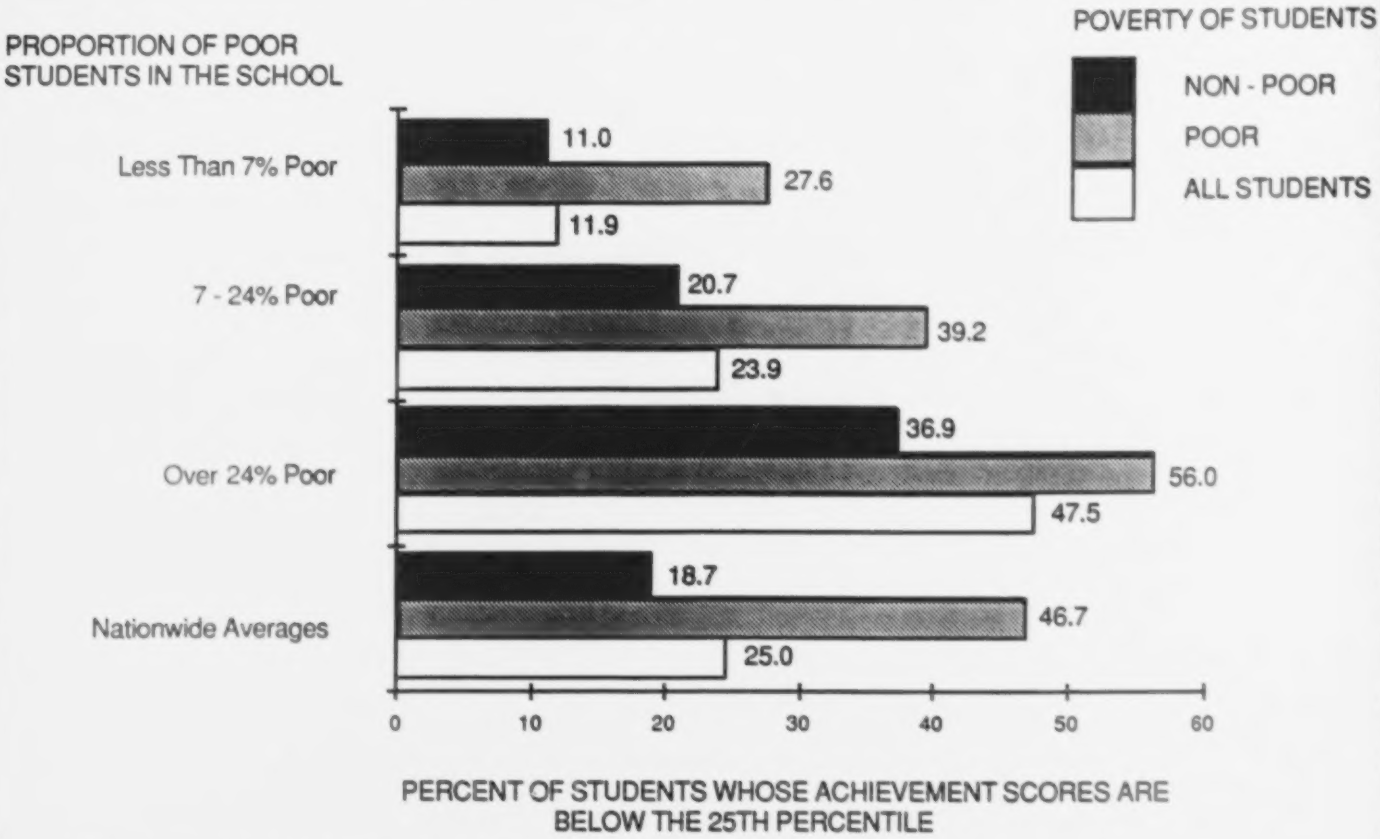


FIGURE READS: "In schools serving less than 7 percent poor students, 11 percent of non-poor students scored at or below the 25th percentile and 27.6 percent of poor students scored at or below the 25th percentile."

SOURCE: Reanalyses of Sustaining Effects Study data.

greater proportions of low-achievers than schools with relatively fewer poor students (47.5 percent low achievers versus 11.9 percent low achievers). Further, the incidence of low-achievers is larger among both poor and non-poor students in schools serving higher proportions of poor students. Among poor children in these schools, the rate of low achievement is 56 percent, above the 46.7 percent figure for poor students nationwide. Among the non-poor in these high-concentration schools, the proportion of low achievers is 36.9 percent, well above the 18.7 percent nationwide figure. These data are consistent with other research findings reported here. They suggest that living in a poor family does increase the likelihood that a child will experience educational difficulties, but that the relationship between family poverty status and student achievement is not as strong as the relationship between school poverty concentrations and school achievement averages. In fact, non-poor students attending a school with large proportions of poor students are more likely to fall behind than are poor students who attend a school with a small proportion of poor students.

Growth in achievement is also associated with concentrations of poverty in schools. Figure 2.3 indicates growth in reading achievement for students attending either high- or low-concentration elementary schools.[7] Students in high-concentration schools had lower achievement scores throughout their elementary school years than students attending other schools. The difference between the groups grows larger as students move from first to third grade, and then remains roughly constant through the remaining elementary grades. The difference also appears to expand both during the school year and during the summer months, rather than being limited to either period.

Figure 2.3

## SIMULATED READING PROGRESS OF STUDENTS IN SCHOOLS SERVING LOW AND HIGH PROPORTIONS OF POOR STUDENTS [a)]

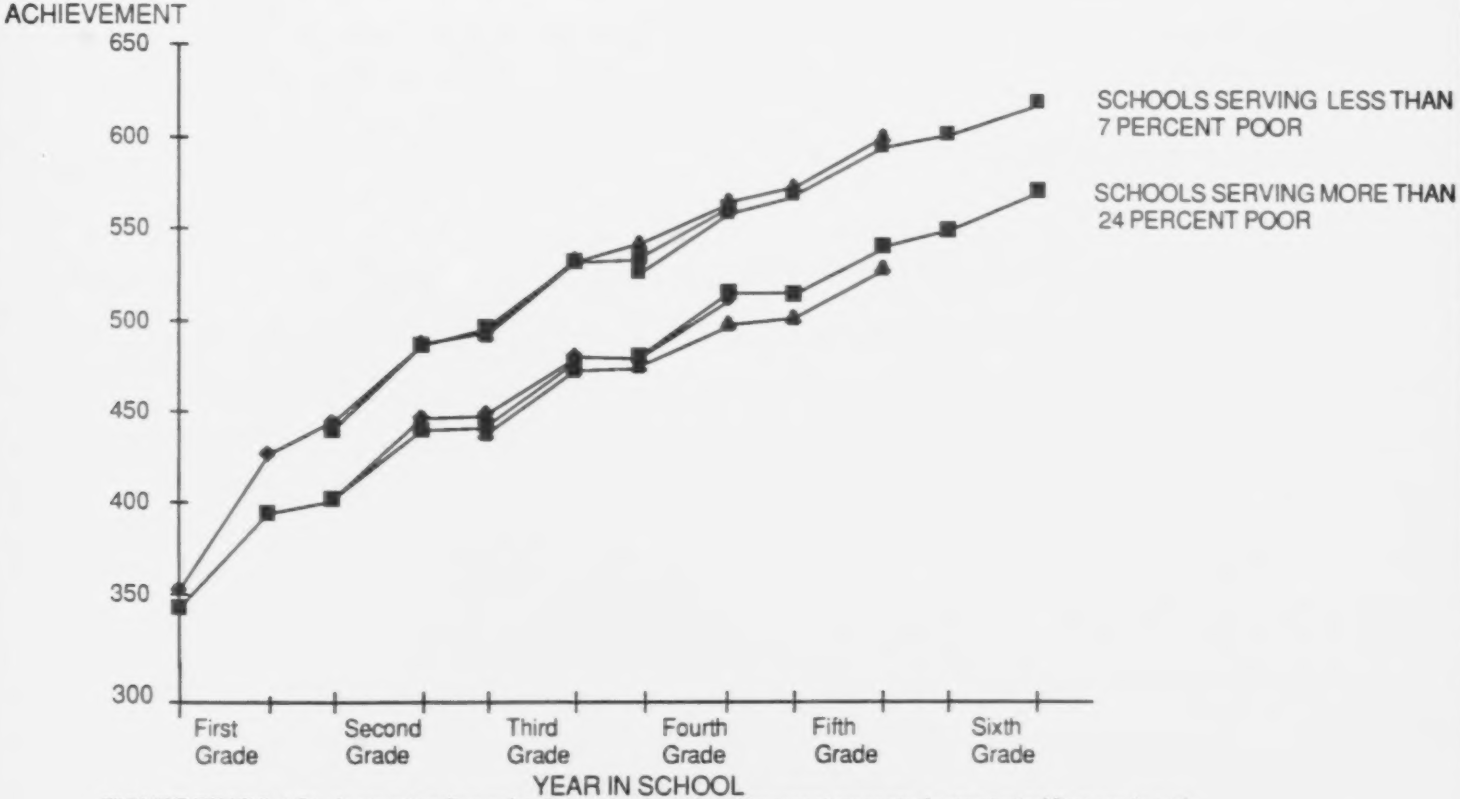


FIGURE READS: " Students attending schools serving less than 7 percent poor students started first grade with average scores of 352. By the end of first grade, their average score was 426 and by the beginning of their second grade year it was 444."

SOURCE: Reanalyses of Sustaining Effects Study data (Appendix D, Part 2).

a) These growth lines were simulated by superimposing the growth lines of four cohorts of students: one tested from first through third grade, one from second through fourth grade, one from third through fifth grade and one from fourth through sixth grade.

These findings still do not necessarily suggest that the differences among schools reflect anything other than differences already associated with individual family backgrounds. Those students who are labeled "non-poor" in a school serving a large proportion of poor children may still live in families whose incomes are quite low, while students labeled "non-poor" in low-concentration schools may live in middle or higher-income families. Further, a school serving a high concentration of poor students may serve disproportionally more minority students, more single-parent families, less educated mothers, or more children per family. Both student and family characteristics may differ across schools.

It is possible to statistically adjust students' achievement scores to determine the extent to which they are associated with the proportion of poor students in a school after their association with personal and family characteristics have been taken into account. Appendix D describes our procedures for doing so. We find that, even after student and family characteristics have been taken into account, increases in the proportion of poor children in a school are associated with decreases in average starting achievement levels and even occasionally with decreases in learning rates over time.

Student learning rates, however, are less often associated with the proportion of poor students in the school. We find concentrations of poverty to be related to student learning rates in only two of the eight relationships tested, even though it was related to beginning achievement in five of the eight tests. Perhaps if a longer time interval had been studied, the relationship between poverty concentrations and student growth rates may have been more often statistically significant. The widening gap between the achievement scores of students in high- and low-concentration schools, illustrated in Figure 2.3, suggests that such a relationship exists.

Similar analyses were conducted for secondary students using the High School and Beyond data, and these analyses yielded similar findings. The relationship between concentration of poverty and student achievement exists even after the associations between achievement and the characteristics of the individual students and their families have been taken into account. That is, students' achievement scores are only partly accounted for by their individual and family characteristics; they are also partly accounted for by the proportion of poor students attending their school.

These analyses describe statistical relationships and cannot be used to determine the causes of lowered student achievement for a number of reasons. One is that the data bases we have drawn upon do not measure all possible causes. There is an infinite number of differences among schools, any one of which, or a combination of which, may contribute to low achievement. The particular differences measured here -- poverty rates -- may not be direct causes of lowered student achievement, but instead may be associated with other school characteristics not measured here, which inhibit achievement. Researchers tend to look for explanations for these statistical patterns in four aspects of school life.

One hypothesis is that *communities* with high concentrations of poverty are different from other communities. Under this line of reasoning, even if the schools were doing an admirable job and the parents individually tried to encourage their children to do well, some characteristics of the community would be inhibiting the development of these children.

A second hypothesis is that peers in the school exert an influence over individual students. This hypothesis would hold that peers establish norms regarding such things as academic standards and the value of education, and that these norms in turn influence the level of effort individual students put into their education.

A third hypothesis as to why these school-to-school variations exist is that the resources available in the schools differ in ways that affect student achievement. In fact, Chapter 1 is based in part on the assumption that school districts with high concentrations of poor children lack the resources needed to provide the services that these students need.

The fourth hypothesis often used to account for these school-to-school differences in student achievement is the ambiance of the school. For the past decade or more, many researchers have taken an interest in inner city schools that are raising achievement scores among their students -- schools, in other words, that appear to be exceptions to the rule. Researchers have discovered a number of special characteristics of these schools and, on the basis of their findings, have generated a description of what they call an "effective school."[8] The characteristics they identify describe the ethos of schools more than their particular configuration of resources or services. Among the factors observed are the leadership qualities of the school principal, the presence of a strong discipline code, shared goals, regular testing of students and high teacher expectations for student performance.

Our purpose here, however, has less to do with determining the reasons for low achievement in schools and more to do with determining whether poverty concentration is a reasonable measure to use to estimate which schools are likely to encounter low-achieving students. Thus, the important finding here is that high-poverty schools have more low-achieving students, regardless of why they do.

## Conclusions

A family's official poverty status is only weakly related to student achievement. However, official poverty status does not reflect the intensity of students' poverty experiences, as measured by the length of time they spend living in poverty or by the proportion of poor children attending their schools. Both of these are associated with students' educational progress. The findings regarding concentrations of poverty are consistent with the Chapter 1 provisions, which require districts to select schools to participate in the program on the basis of their concentrations of poverty. The provisions do not acknowledge the length of time a family may have been poor.

# Notes to
# Chapter 2

1 A. Wolf, Poverty and Achievement. National Institute of Education, 1977. For a more recent review, see K. R. White, "The Relationship Between Socioeconomic Status and Academic Achievement," Psychological Bulletin, 91(3), 1982: 461-481.

2 White, op. cit. The average correlations with student achievement were: income .315; education .185; occupation .201; and home atmosphere .577. See also C. Konstant, and R. Apling, Annotated Bibliography: Studies of School and Demographic Variables. Washington, DC: Policy Studies Associates, 1984.

3 The problems of estimating relationships from aggregate data were defined in the early 1950s by W. W. Robinson ("The Ecological Fallacy." Journal of Sociological Research, 1953.) It frequently happens that relationships appear to be stronger among aggregate units than they are among individuals. Since then, statistical tools have been developed to try to correct this problem. Appendix D describes the analytic strategy used here.

4 These two groups of students are partially overlapped in this analysis. Some of the 16-year-olds became 18 during the period of the investigation and are consequently included in both groups. Even taking overlap into account, however, the data seem to indicate that long-term poverty increases the student's chances of falling behind their peers even this late in their education careers.

5 PSID researchers find higher average incomes than the Census Bureau does, and therefore find fewer families below the official poverty line. They attribute this to the fact that they interview their study participants at length and consequently discover more sources of income. Even though their data differ on average from Census data, the differences would not affect estimates of the relationships such as those shown here between income and grade attainment.

6 This analysis is based on the Sustaining Effects Study data. Poverty concentrations were defined as follows. We first ranked all the schools and then divided them into four equal-size groups. The top 25 percent were labeled high-concentration schools. Their poverty rates ranged from 24 percent of their student bodies to nearly 100 percent. The bottom 25 percent were labeled low-concentration schools. Less than 7 percent of their student bodies were poor. The middle two groups became the moderate-concentration schools. Their student bodies ranged from 7 to 24 percent poor. Use of the 25th percentile rank as a measure of achievement is simply a matter of convenience.

7 The overlapping lines in Figure 2.3 reflect the multiple cohorts of students participating in the Sustaining Effects Study. We have overlaid each groups' three-year growth patterns to simulate the growth pattern of a group moving from first through sixth grade.

8 See, for instance:
W. B. Brookover, C. Beady, P. Flood, J. Schweitzer, and J. Wisenbaker, *School Social Systems and Student Achievement: Schools Can Make a Difference*. New York: Praeger, 1979; D. L. Clark, L. S. Lotto, and M. M. McCarthy, "Factors Associated With Success in Urban Elementary Schools." *Phi Delta Kappan*, 61, 1980: 467-470. R. R. Edmonds, "Effective Schools for the Urban Poor," *Educational Leadership*, 37, 1979: 15-27. M. Rutter, B. Maughan, P. Mortimer, J. Ohstrom, and A. Smith, *Fifteen Thousand Hours: Secondary Schools and Their Effects on Children*. Cambridge, MA: Harvard University Press, 1979.

# Chapter 3
# Characteristics of Poor and Low Achieving Students

## Overview of the Chapter

In chapter 2 we showed that, while there is only a modest association between student achievement and official family poverty status, as defined by the census, there is a strong association between student achievement and measures of the intensity of children's poverty experiences. We used two measures of intensity -- the length of time a family lived in poverty and the proportion of poor children attending a school.

Chapter 1 legislation, however, relies on official census counts of poverty to allocate funds among counties. In this chapter, we describe the characteristics of children whose families meet the official census definition of poverty as well as those who experience long spells of poverty and those who live in areas with high concentrations of poverty. We also examine students who are not achieving well in school. These analyses rely on separate data bases, so that it is difficult to tell the extent to which the same students are being identified by all the analyses. We find that:

- About 75 percent of non-elderly adults counted as poor by the census are experiencing medium- to long-term spells of poverty. The remaining 25 percent counted by the census are likely to be experiencing poverty spells of three years or less.
- Children who experience long-term family poverty and children who live in areas with high concentrations of poverty are more likely to belong to minority groups, more likely to live in the Southeast, and more likely to live in small rural areas. Those residing in areas with high concentrations of poverty are also more likely to reside in large urban areas, a characteristic not reported by researchers investigating long-term family poverty. Children who lack reading proficiency are also more likely to be minorities, to live in rural areas or in large urban areas, and to have less-educated parents.

- The preponderance of Black children, and minority children in general, among those experiencing long-term family poverty and concentrations of poverty in their communities suggests that minorities may be experiencing a qualitatively different form of poverty than other poor children experience. Their families are likely to be poor for longer periods of time, and their communities are more likely to contain a preponderance of poor people.

- To the extent that students experiencing these intense forms of poverty live in different communities from other poor students, the census counts of poverty may under-estimate the incidence of low achievement in these communities.

## Introduction

Whereas the preceding chapter focused on the relationship between poverty and achievement, this chapter looks at each phenomenon separately. As in chapter 2, we do not limit our attention to those students actually served by Chapter 1 programs, but instead describe broader populations of interest to Chapter 1. We describe children who experience each of the forms of poverty described earlier -- those whose families meet the official census definition of poverty, those who are poor for long periods of time, and those residing in school districts serving high concentrations of poverty. We also review evidence regarding low achieving students. Students defined in any of these ways could become candidates for local compensatory education programs. However, findings from the preceding chapter suggest that children who experience more intense forms of poverty are more likely to be behind in school than students who experience less intense forms of poverty. Therefore, a second goal of this chapter is to determine the extent to which these two groups of students may differ in identifiable ways from the total population of poor students. Since no single data base includes data on all forms of children's poverty experiences, our comparisons cannot be made directly, but instead must be drawn by inference after separately reviewing each data base.

## Students Whose Families Are Officially Poor

This section summarizes childhood poverty trends found in census data[1] according to race, ethnicity, and language; family structure and size; mother's education; and student mobility.

### Race, Ethnicity and Language

Minority groups in general are more likely to be poor than are Whites. Figure 3.1 shows poverty rates among the three major population groups in this country. The most significant finding in this figure is that poverty rates are much lower among White students than among other groups of students. In addition, there are differences among poverty rates by grade level. Among White students the poverty rate in junior and senior high schools is lower than it is among elementary-level White students, a pattern that often is assumed to reflect either the rising income of maturing families or the fact that mothers are likely to remain at home while their children are young, and return to work when the children are older. However, a very different pattern occurs among students from Black and Hispanic backgrounds. As these students move from elementary to junior high school, their families are *more* likely than families of elementary-age students to be poor. The trend reverses only in senior-high school poverty rates, which are lower for nearly all groups. The lower rates among high-school students could also reflect the fact that poor students are more likely to drop out of school, and so would not be included here.

Figure 3.2 shows poverty rates among children whose families speak a language other than English within their homes. The students counted as speaking a language other than English include some, but not all, of those called Hispanic in Figure 3.1, and include speakers of other languages as

Figure 3.1

## PERCENT OF STUDENTS AGED 5-18 COUNTED AS POOR BY RACE/ETHNICITY AND GRADE LEVEL

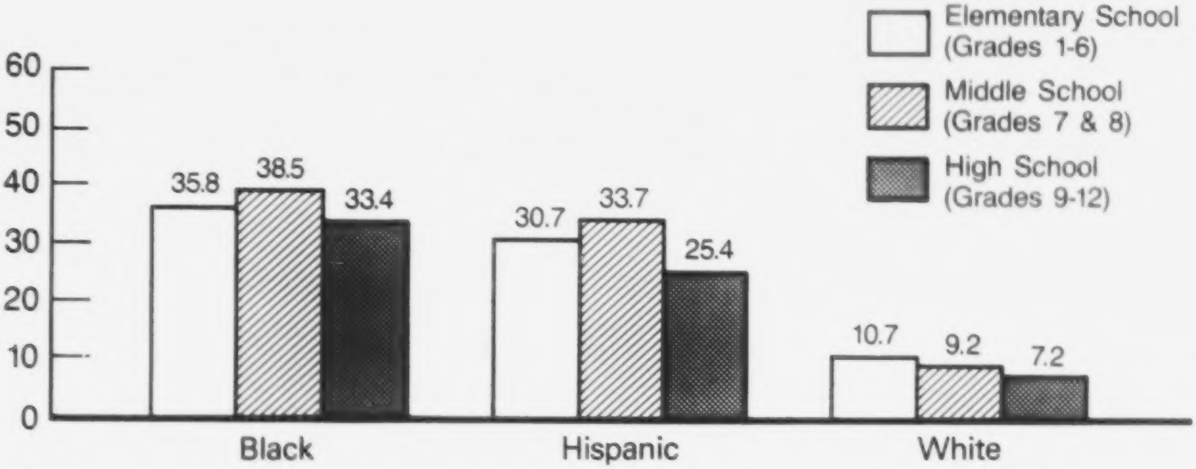


FIGURE READS: "Among all Black students in elementary schools, 35.8 percent live in poverty. Among Black students in middle school, 38.5 percent live in poverty."

SOURCE: Reanalyses of 1980 Census.

Figure 3.2

## PERCENT OF LANGUAGE MINORITY STUDENTS AGED 5-18 COUNTED AS POOR BY GRADE LEVEL

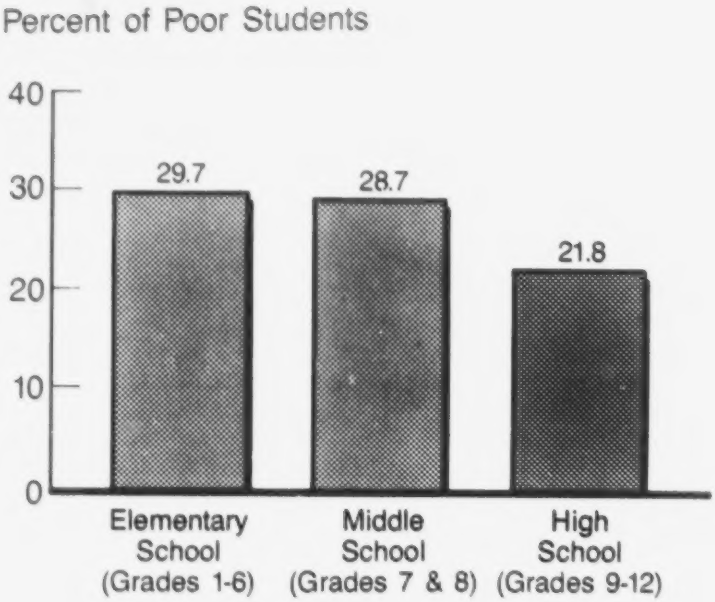


FIGURE READS: "Among all elementary school students who speak a language other than English at home, 29.7 percent live in poverty."

SOURCE: Reanalyses of 1980 Census.

well. Their poverty rates are, on average, not quite as high as those of Hispanics.

## Family Structure and Size

Both parents' marital status and number of siblings are strongly associated with poverty. The poverty rate among children living in what the census bureau calls "female-headed households" is 50 percent, whereas the poverty rate in households with males present is only 12.3 percent.[2] That poverty is so much more prevalent among female-headed households is especially problematic in light of the fact that the number of children living in such households has more than doubled in the past decade and a half, rising from 9 to 20 percent.[3]

The poverty implication of family structure is further complicated when the child's race is considered. Figure 3.3 shows poverty rates among children when both race or ethnicity and parents' marital status are considered. While poverty rates are substantially higher among female-headed households than other households, they are higher still when the female is also a member of a minority group. Poverty rates among children range from a low of 11.9 percent for White children living with both male and female adults to over 70 percent for Hispanic children living with a mother.

The number of children residing in the household is also related to family poverty status. According to the congressional report, Children in Poverty,[4] the poverty rate among families with one or two children is 14.5 percent, whereas it is 27.6 percent for families with three or four children and 55.8 percent for families with five or more children. Table 3.1 shows the number of children who live in households with varying numbers of children.[5] Whereas only 12.5 percent of non-poor children live

Figure 3.3

## PERCENT OF POOR CHILDREN FROM DIFFERENT FAMILY BACKGROUNDS

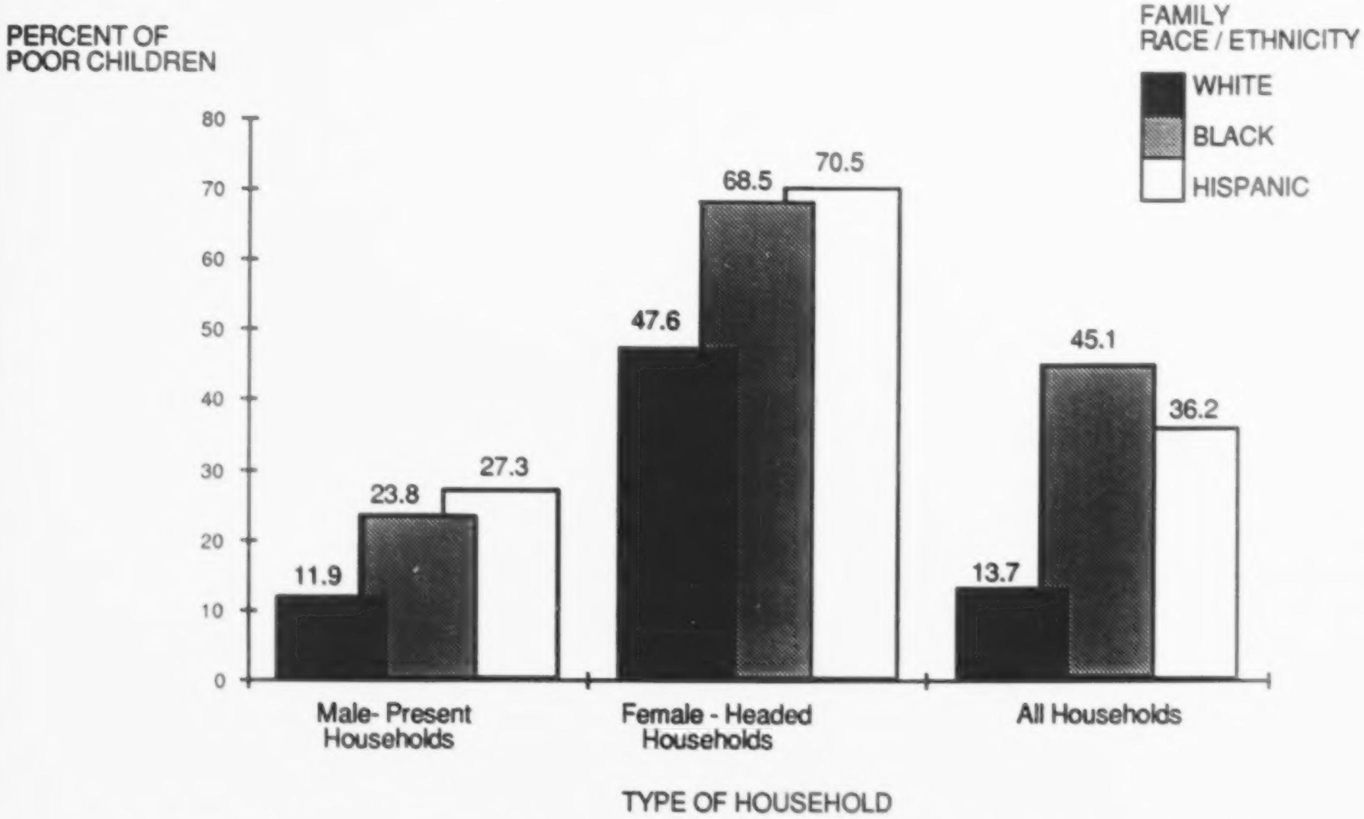


FIGURE READS: "Among all White children living in households with an adult male present, 11.9 percent are poor. Among all Black children living in households with an adult male present, 23.8 percent are poor."

SOURCE: Congressional Research Service/ Congressional Budget Office, *Children in Poverty*. Committee on Ways and Means, U.S. House of Representatives, 1985. Page 31.

## Table 3.1

### Percent of Children Living in Different Family Sizes

| Number of Children in Household | All Children | Poor Children | Non-Poor Children |
|---|---|---|---|
| One | 22.0% | 15.9% | 23.7% |
| Two or Three | 61.4 | 52.8 | 63.8 |
| Four or More | 16.6 | 31.3 | 12.5 |
| TOTAL | 100% | 100% | 100% |
| Number of children in analysis: | 33,819 | 7,392 | 26,427 |

TABLE READS: "Twenty-two percent of all children live in households with only one child. 15.9 percent of poor children live in such households and 23.7 percent of non-poor children live in such households."

SOURCE: Reanalyses of March 1984 Current Population Survey data (Appendix E, Part 1, Table 5).

in households with four or more children, 31.3 percent of poor children live in such large households.

### Mother's Education

Between 1978 and 1984 the percent of children living with at least one high-school graduate -- regardless of which parent it was -- rose from 77.6 percent to 82.7 percent. The percentage of poor children living with at least one high school graduate also rose, from 43.5 to 54.9 percent. Though the latter jump was substantial, the proportion is still considerably smaller than for the population as a whole. Figure 3.4 depicts educational attainment of poor and non-poor children's parents in 1984. Over three quarters of non-poor students' mothers have graduated from high school, whereas only half of poor students' mothers have. Further, some 18 percent of poor mothers still have received less than an eighth grade education.

### Student Mobility

Table 3.2 indicates the proportion of children who had moved within the year preceding the March 1984 Current Population Survey (CPS). The proportion of poor children moving is roughly double the proportion of non-poor children moving. Poor children were more likely than non-poor children to move, regardless of whether the moves were to different areas or to new residences within the same areas. From an educational point of view, the distance of the move may not matter. Moves within an area, while perhaps less stressful to parents than more distant moves, may still mean changes of schools for children, shifts in educational programs and teachers, and as many social and academic adjustments as more distant moves require.

Figure 3.4

## EDUCATIONAL ATTAINMENT OF POOR AND NON-POOR CHILDREN'S PARENTS

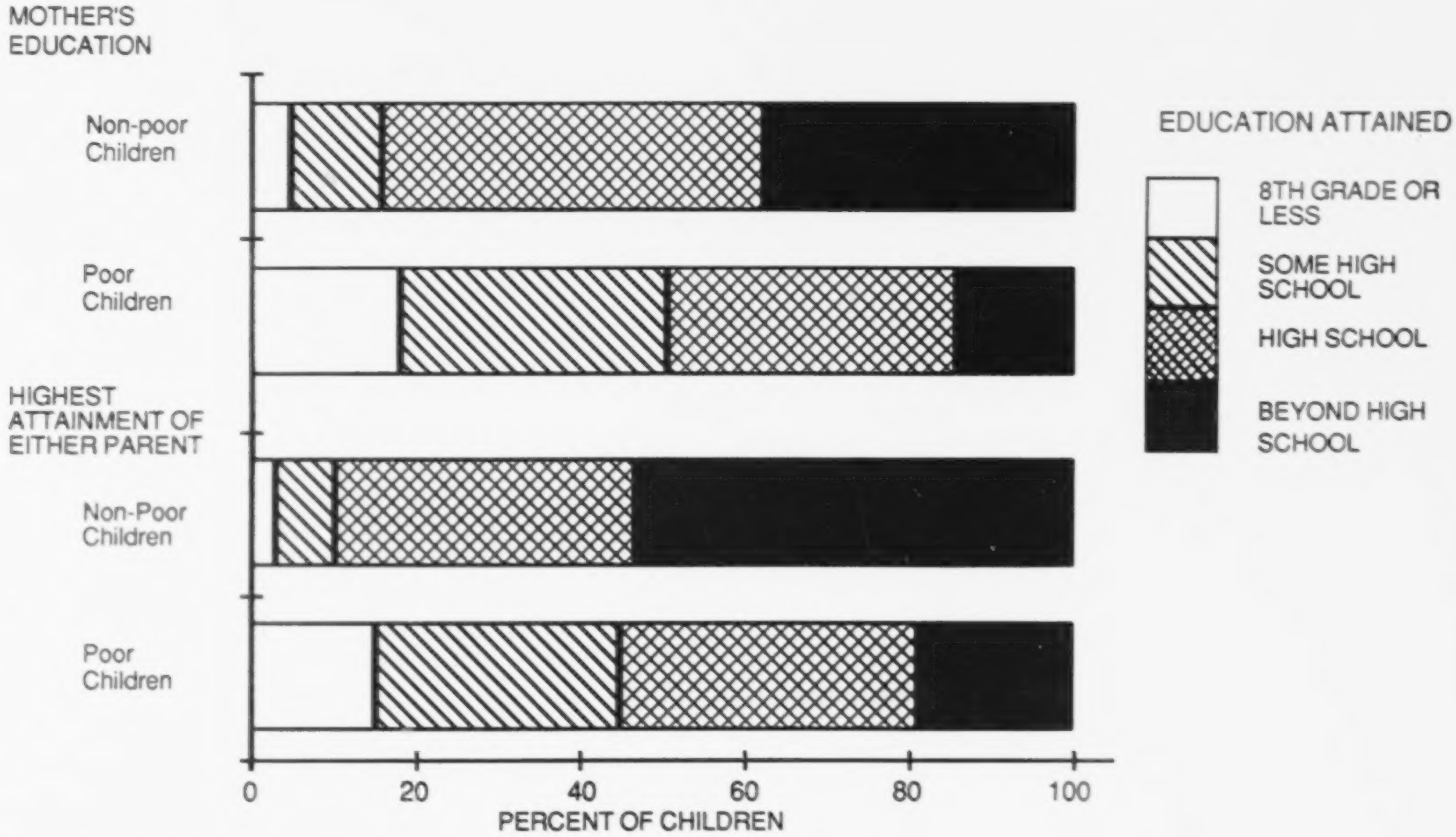


FIGURE READS: "A dominant proportion of non-poor children have mothers with a high school education or more. Poor children are less likely to have mothers who graduated high school or pursued additional education."

SOURCE: Reanalysis of March 1984 Current Population Survey (Appendix E, Part 1, Table 2 & 3).

## Table 3.2

### Percent of Poor and Non-Poor Children Moving Between March 1983 and March 1984

| Movement | All Children | Poor Children | Non-Poor Children |
|---|---|---|---|
| Moved within the Community | 10.0 | 15.0 | 8.6 |
| Moved to a Different Community | 4.8 | 7.9 | 3.9 |
| No Movement | 85.2% | 77.1% | 87.5% |
| TOTAL | 100% | 100% | 100% |
| Number of children in analysis: | 34,937 | 7,697 | 27,241 |

TABLE READS: "Ten percent of all children moved to a new residence within the same community during the year preceding the last census survey. Fifteen percent of poor children made such moves, and 8.6 percent of non-poor children made such moves."

SOURCE: Reanalyses of March 1984 Current Population Survey data (Appendix E, Part 1, Table 7).

All of the characteristics reviewed here -- race and ethnicity, marital status of parents, number of siblings, parent education, and mobility are related to the likelihood that the child's family may be defined as poor. Most of them are also associated with student achievement or grade attainment. The particular aspects of child and family poverty we have reviewed here are pertinent to Chapter 1 for a variety of reasons, some having to do with the nature of educational services that might be needed by these children, and some having to do with the degree of their educational need. For instance, the presence of students who are not proficient with the English language may require Chapter 1 programs to provide language instruction. Perhaps less apparent, but certainly equally important are the findings regarding marital status and mother's education. Chapter 1 has historically emphasized the importance of parent involvement, both in the design and in the execution of its programs for children. Yet if these parents are single women, struggling to maintain jobs, families, and tight budgets, they may not have the time to participate in parent advisory councils of the sort customarily associated with local Chapter 1 programs. Further, if they themselves lack an adequate education, they may not be able to help their children, even if they have the time and inclination. Indeed, they may be in need of compensatory education themselves.

With regard to the need these children may have for compensatory education, most of the characteristics described here have been found to be associated with children's educational achievement, and to be associated with achievement even separate from the association between poverty and achievement. Thus, a Black male adolescent living in poverty with several siblings, no father and a relatively less-educated mother, would be expected to have much greater educational need than the student who has only one or two of these characteristics.

## Long-Term Childhood Poverty

One drawback of relying exclusively on census data for examining poverty is that census numbers do not reflect the length of time a family has been poor. Most census surveys provide independent snapshots of the population. They cannot tell us whether the same families are identified as poor each year, or whether each year's survey identifies a completely new population of poor families. Yet we know, from analyses presented in chapter 2, that the length of time a child spends in poverty is associated with his or her grade attainment.

Researchers conducting the Panel Survey of Income Dynamics (PSID), which we used in chapter 2 to assess that relationship, collected information on a representative sample of families for over 15 years[6] and found that family incomes changed often during this period. Table 3.3 summarizes changes in the income status of PSID participants between 1971 and 1978. The underlined numbers indicate the proportion of each group which retained the same relative income status in 1978 as they had in 1971. Those numbers in the furthermost corners from the diagonal indicate members of the population who experienced the most extreme changes in income status.

There apparently is a great deal of change in family income status in this country. Many members of each income group moved into other income groups, some moving all the way from lowest to highest groups -- or from highest to lowest -- in just this eight-year period. Such major changes

Table 3.3

Estimated Proportion of Each Income Group Who Maintained
Their Relative Income Status Over Time

| | Income Level in 1978 | | | | | |
|---|---|---|---|---|---|---|
| Income Level in 1971 | Lowest Quintile | Second Lowest Quintile | Middle Quintile | Second Highest Quintile | Highest Quintile | Total |
| Lowest Quintile | 55.5% | 22.0 | 9.5 | 7.0 | 6.0 | 100% |
| Second Lowest Quintile | 21.5 | 34.5 | 21.5 | 13.5 | 9.0 | 100% |
| Middle Quintile | 13.5 | 23.5 | 30.5 | 18.5 | 14.0 | 100% |
| Second Highest Quintile | 6 | 15 | 25.5 | 31.5 | 22.0 | 100% |
| Highest Quintile | 3.5 | 4.5 | 14 | 29.5 | 48.5 | 100% |

TABLE READS: "Of all individuals whose income placed them in the lowest quintile in 1971, 55.5 percent were in the same income category in 1978. An additional 22 percent of them had moved to the next lowest quintile; 9.5 percent had moved to the middle quintile; 7 percent to the second highest quintile and 6 percent from the lowest to the highest quintile."

SOURCE: Based on data presented by Greg J. Duncan, *Years of Poverty, Years of Plenty*. Ann Arbor, MI: University of Michigan Institute for Social Research, 1984, p. 13.

are relatively less common than minor changes, but the fact that they occur at all is remarkable. It is also clear, however, that the group starting at the lowest income level was less likely than any other group to move out of its starting income level. Over half its members continued to be in the lowest income group eight years later.

Table 3.4 indicates the proportion of Black and White PSID study children who were poor for differing lengths of time. It refers to children who were between the ages of 1 and 3 in 1968, and shows their poverty experiences for the next 15-year period, approximately the length of their childhood. The differences between White and Black children are substantial: the proportion of White children to encounter poverty of any duration was only 25 percent, whereas the proportion of Black children to encounter poverty was 78 percent. Black children were also more likely to experience long periods of poverty; some 28 percent of them were poor for ten or more of their fifteen childhood years. However, the data also indicate that, regardless of race, the largest groups were those who experienced only short spells of poverty. Among Whites, 19.8 percent experienced a spell of poverty lasting 4 years or less; among Blacks, the proportion was 32.3.

PSID researchers also estimated the number of years that children with different characteristics would probably spend living in poverty during their childhood. The most significant characteristic related to the length of time a child would spend in poverty was race. After taking race into account, a number of other characteristics also made a difference, as Table 3.5 illustrates. For instance, among non-Black children, those whose mothers never married are likely to spend over six of their childhood years in poverty, in contrast to an average length of time in poverty among all

Table 3.4

Incidence of Short-Term and Persistent Poverty
of Children by Race[a]

| Length of Time in Poverty (Out of 15 Years) | White Children | Black Children |
|---|---|---|
| 1 to 4 years | 19.8% | 32.3% |
| 5 to 9 years | 4.6 | 17.7 |
| 10 to 14 years | 0.6 | 24.0 |
| Poor all 15 years of childhood | 0.0 | 4.0 |
| TOTAL Experiencing Poverty | 25.0 | 78.0 |

TABLE READS: "Among all White children, 19.8 percent experienced a spell of poverty lasting from one to four years. Among Black children, 32.3 percent experienced poverty spells of this length."

SOURCE: Panel Survey of Income Dynamics data, analyses of children who were between one and three years old in 1968. Greg J. Duncan and Willard L. Rogers, "A Demographic Analysis of Childhood Poverty." Unpublished paper, University of Michigan Institute of Social Research. Cited by Congressional Research Service/Congressional Budget Office, Children in Poverty, Committee on Ways and Means, U.S. House of Representatives, 1985, pp. 43-44.

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[a] Estimates of poverty rates from the PSID are consistently lower than official Census Bureau estimates. Analysts believe the difference results from more complete accounting of income on the PSID than the Current Population Survey. The Census Bureau acknowledges that its current population surveys do underestimate income. It is not known exactly how much more accurate PSID income information is. For the types of analysis presented here, it is more important that the data collection be consistent over time, than accurate at a point-in-time. (Such a difference would also not affect formula allocations, since each county or school district would receive a proportionally equal over-estimation of the number of poor children).

## Table 3.5

### Expected Number of Years in Poverty During First 15 Years of Life

| | Non-Black | Black |
|---|---|---|
| All Households | 0.8 | 5.4 |
| Characteristics of Household at Birth of Child: | | |
| Never Married Mother | 6.2 | 6.0 |
| Teenage Mother | 1.2 | 5.4 |
| Education of Head: | | |
| 8 years | 1.2 | 5.6 |
| 12 years | 0.7 | 5.3 |
| Characteristics of Household Throughout Childhood (15 years): | | |
| Head Disabled | 3.3 | 10.9 |
| Lived in South | 0.8 | 6.4 |
| Lived Out of South | 0.7 | 4.3 |
| Large City | 0.7 | 3.9 |
| Rural Area | 1.1 | 8.1 |
| 1 Parent | 3.2 | 7.3 |
| 2 Parent | .5 | 3.0 |

TABLE READS: "The average non-Black child is expected to spend eight-tenths of a year in poverty during his or her fifteen years of childhood. The average Black child is expected to spend 5.4 years in poverty during this period." [These figures represent 5 percent and 36 percent, respectively, of the 15 years of childhood].

SOURCE: Greg J. Duncan and Willard L. Rogers, "A Demographic Analysis of Childhood Poverty." Unpublished paper, University of Michigan Institute for Social Research. Cited by Congressional Research Service/Congressional Budget Office, Children in Poverty. Committee on Ways and Means, U. S. House of Representaives, 1985, p. 47.

non-Black households of less than one year. Among Black children, those living with a disabled head of household are likely to spend nearly 11 of their 15 childhood years in poverty, in contrast to the average among all Black households of 5.4 years. The findings regarding Black children are particularly important because almost 90 percent of children who were poor for ten or more years of their childhood were Black.[7] This difference between the races suggests that Black students are likely to experience a qualitatively different form of poverty than are White students.

In general, the length of time a child spends in poverty is likely to increase if the child is Black, lives in a rural area, has only one parent or lives with a disabled head of household. Many of these characteristics are also associated with family poverty status as measured by the census. However, the census counts of poverty include any family whose current income meets the official definition of poverty, regardless of whether the income was reduced to this level last month, or whether it has been low for many years. Yet, even though the PSID study has followed the same families for many years, it still cannot show how many of its families were poor prior to the start of data collection in 1968, or how many will continue to be poor in the future. Two analysts recently used the PSID data to estimate the number of people who would have experienced different lengths of time in poverty during the 1970s, regardless of whether their experiences began earlier or extended beyond the exact period of PSID data collection.[8] These researchers also estimated the proportion of those living in poverty for various amounts of time who would have been counted as poor by a one-time survey such as the census.

Table 3.6 summarizes their findings. The first column indicates the proportion of people whose spells of poverty overlapped the years of the PSID analysis. It indicates that the vast majority of poverty spells were relatively short. More than 40 percent of all poverty spells lasted a year or less, and over two-thirds of them lasted less than three years.

The second column of Table 3.6 offers an important contrast. It indicates the proportion of those who are likely to be counted as poor at any one time. Whereas column 1 shows that most spells of poverty tend to be rather short, column 2 shows that most people counted as poor at any one time are experiencing a long spell of poverty. Furthermore, while the average poverty spell is only 4.2 years, the average spell among those counted in a census survey is estimated to be 11 years.

This apparent contradiction occurs because those individuals who experience brief periods of poverty are less likely to be counted in one-time surveys. The 41.1 percent experiencing single years of poverty do not all experience poverty during the same year. As one family moves out of poverty, another moves into poverty, so only 9.7 percent of them are poor at any one time. An income survey conducted during 1975 would miss most short-term spells of poverty, and even many intermediate-term poverty spells. Four-year spells would be missed, for instance, if they occurred between 1968-72, 1969-73, 1970-74, or 1976-80.

These data are germane to Chapter 1 in two ways. First, as we saw earlier, students experiencing long spells of poverty were more likely to fall behind in their education than those experiencing shorter spells of poverty. We now see that only 18 percent of all persons who encountered poverty during this period were poor for more than eight years.

## Table 3.6

### Percent of Non-elderly Persons Experiencing Poverty Using Two Methods of Estimation

| Length of Poverty Spell | Total Percent Beginning a Spell of Poverty Between 1969 and 1978 | Average Percent Observed Experiencing a Poverty Spell at Any One Time Between 1969 and 1978 |
|---|---|---|
| 1 year | 41.1% | 9.7% |
| 2-3 years | 27.7 | 15.5 |
| 4-7 years | 13.2 | 15.8 |
| 8 or more years | 18.0 | 59.1 |
| Total | 100.0 | 100.0 |
| Average Years in Poverty | 4.2 | 11.0 |

TABLE READS: "Of all persons beginning a period of poverty between 1969 and 1978, 41.1 percent experienced spells of poverty lasting one year or less. Of all persons counted as poor at any given time, only 9.7 percent were experiencing a poverty spell of one year in length."

SOURCE: Analyses of the Panel Survey of Income Dynamics Data. D. Ellwood and Mary J. Bane, "Slipping Into and Out of Poverty: The Dynamics of Spells." Cited by Congressional Research Service/Congressional Budget Office, Children in Poverty. Committee on Ways and Means, U. S. House of Representatives, 1985, p. 47.

Second, Chapter 1 funds are distributed among counties and school districts on the basis of surveys of poverty per se rather than on the basis of long-term poverty. A school district receives as much money for a student whose family happens to be poor this year as it does for a student whose family has been poor for the last ten years. While these data indicate that the majority of those counted in a census survey -- 59.1 percent -- would be experiencing long-term poverty, and an additional 15.8 percent would be experiencing spells of poverty lasting from four to seven years, they also indicate that 25 percent of those counted would be experiencing spells of less than three years. The census is, then, a reasonably good indicator of the long-term poverty, but not a perfect one.

But the characteristics of students who are likely to encounter long-term poverty are not the same as those of children who may encounter shorter spells of poverty. Children experiencing long-term poverty are far more likely to be Black, more likely to live in rural areas and more likely to have only one parent. To the extent that these students have different academic characteristics than the population of students counted as poor by the census, and to the extent that they live in different school districts than short-term poor families, census poverty counts may not accurately reflect the variation in student achievement levels among counties and school districts that it is intended to reflect.

### Concentration of Poverty

To the extent that a child lives in a neighborhood with a large number of poor families, or attends school with a number of children from poor families, the child may have a more intense encounter with poverty than the child who does not regularly associate with poor children. The Sustaining Effects Study data, used in the last chapter to assess the relationship between concentrations of poverty and student achievement, permit us to determine the demographic composition of students in schools serving relatively more, or fewer, poor students. We ranked the schools participating in the SES according to the percent of their students who came from poor families, and then divided the schools into four equal groups.

Figure 3.5 shows the composition of students in the top group (schools with large proportions of poor students), the bottom group (schools with small proportions of poor students) and the middle two groups. Though White students appear in relatively larger proportions in all three types of schools, minority students are far more likely to appear in high-poverty-concentration schools than in any others.

No national data bases exist that permit us to determine *where* the schools with such high poverty rates are located. However, it is possible to determine where high-poverty *districts* are located. To do this, we began as before, by ranking districts nationwide by the percent of poor students whom they served in 1980, and then dividing the list into four roughly equal-sized groups.[9]

Figure 3.6 shows the proportion of poor students served by each quartile of districts. In the lowest quartile, districts serve student populations for whom less than 7 percent are poor; in the highest quartile, they serve groups for whom 21 percent or more are poor. However, districts in this highest quartile serve poverty concentrations ranging all the way from 21 percent to 100 percent of their student bodies. Thus, these districts differ substantially among themselves in their poverty rates, in addition to differing as a group from other districts.

Figure 3.5

## RACIAL/ ETHNIC COMPOSITION OF ELEMENTARY SCHOOLS SERVING DIFFERENT PROPORTIONS OF POOR STUDENTS

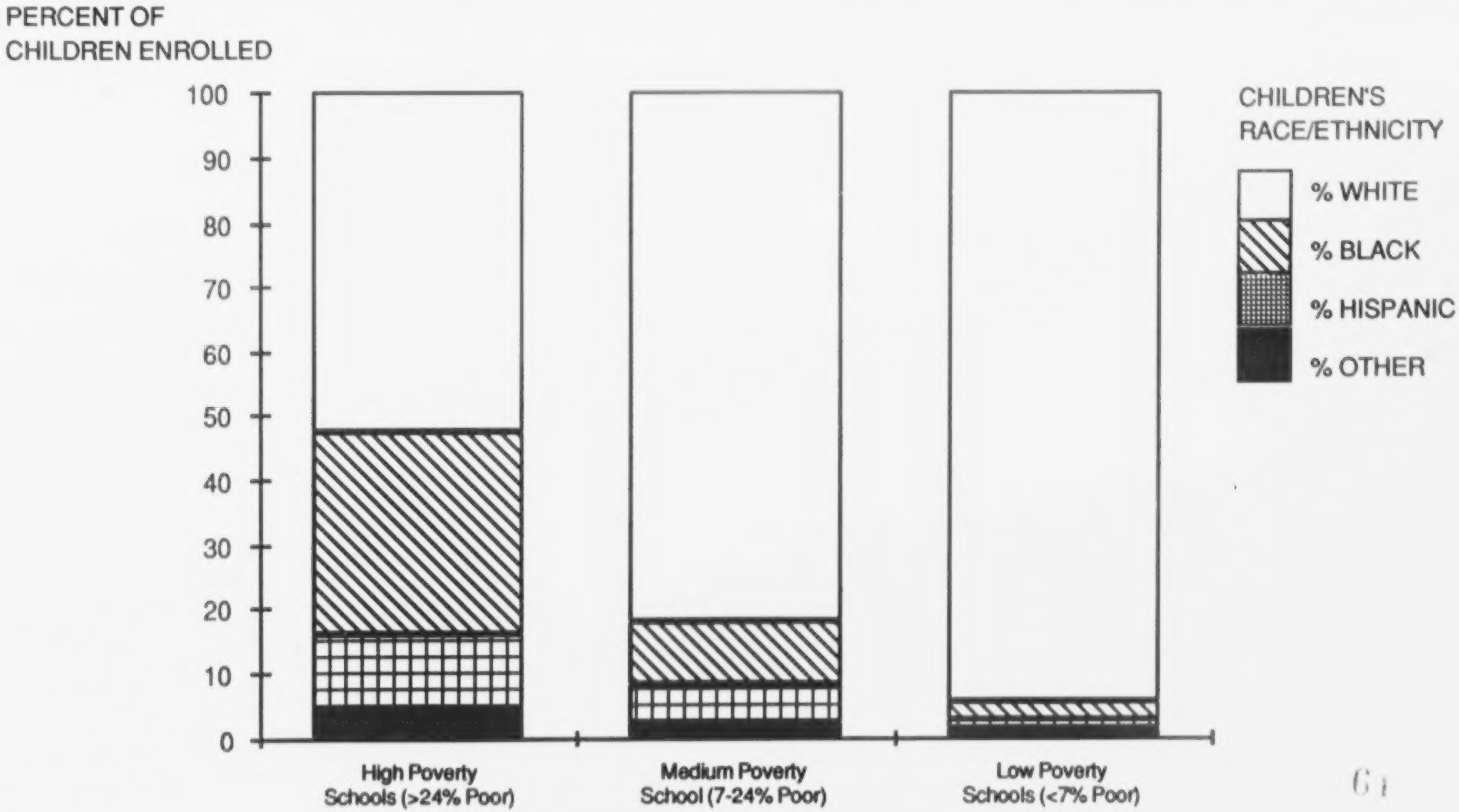

FIGURE READS: "Among elementary schools serving more than 24 percent poor students, almost half of the student body belongs to minority groups."

SOURCE: Reanalyses of Sustaining Effects Study data (Appendix D, Part 2, Table 3).

Figure 3.6

## DISTRIBUTION OF SCHOOL DISTRICT POVERTY RATES BY QUARTILE

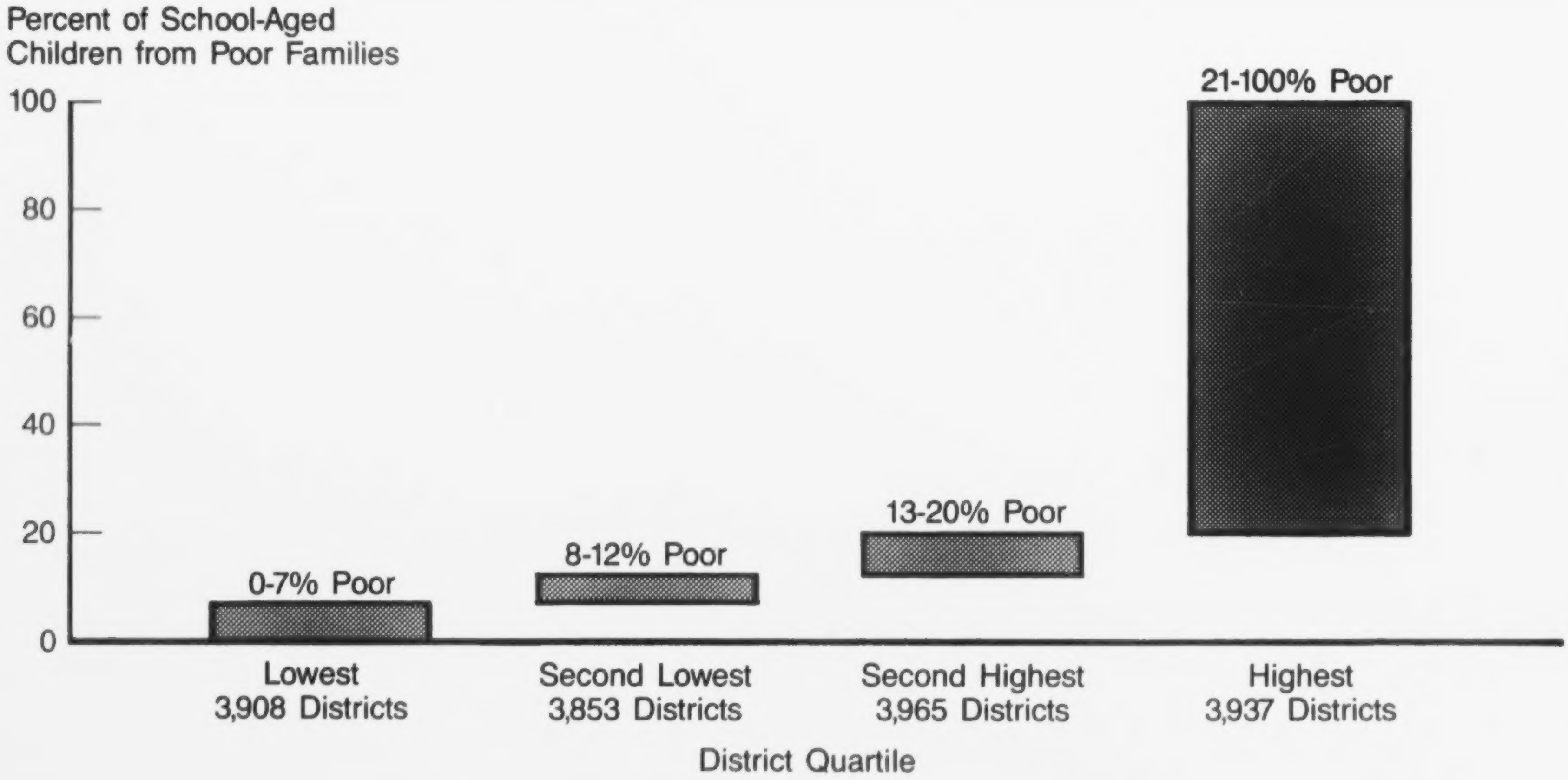

FIGURE READS: "Among the 3,908 school districts in the lowest quartile, the proportions of poor school-aged children living in the district range from zero to seven percent. Among the 3,853 districts in the second-lowest quartile, the proportions of poor, school-aged children range from eight to 12 percent."

SOURCE: Reanalyses of 1980 Census (Appendix E, Part 2).

Despite the considerable variation within the top quartile in their proportions of students from low-income families, comparisons of these districts with other districts reveal several general differences in terms of their size, geographic location, and types of students served. On average, districts in the top quartile are more likely to be small and more likely to be located in the South than districts serving populations with lower poverty rates. With regard to size, however, these averages are skewed by the fact that the vast majority of all school districts are small. When large urban districts are separated from the rest, they are found to have the highest average poverty rates of all, even exceeding the rates found in the nation's smallest school districts and most rural areas.

### Size of School District

Figure 3.7 shows the percentage of school districts in each of several size categories that fall into the highest poverty quartile. If high-poverty districts were distributed evenly among all districts, we would expect them to constitute 25 percent of each size category, for that is their percentage among all school districts. However, about half of the nation's large urban districts serve high concentrations of poverty, nearly double the nationwide proportion of districts serving such high concentrations of poverty. Furthermore, those large urban districts not in the high-poverty-concentration group still serve many poor students. On average, large urban districts serve communities in which 19.7 percent of the families are poor. To the extent that poor families in these districts are concentrated in a few neighborhoods, rather than spread throughout the districts, these school districts will contain schools that serve high concentrations of poverty.

Figure 3.7

## PROPORTION OF SCHOOL DISTRICTS IN EACH ENROLLMENT CATEGORY WITH 21 OR MORE PERCENT POOR SCHOOL-AGED CHILDREN

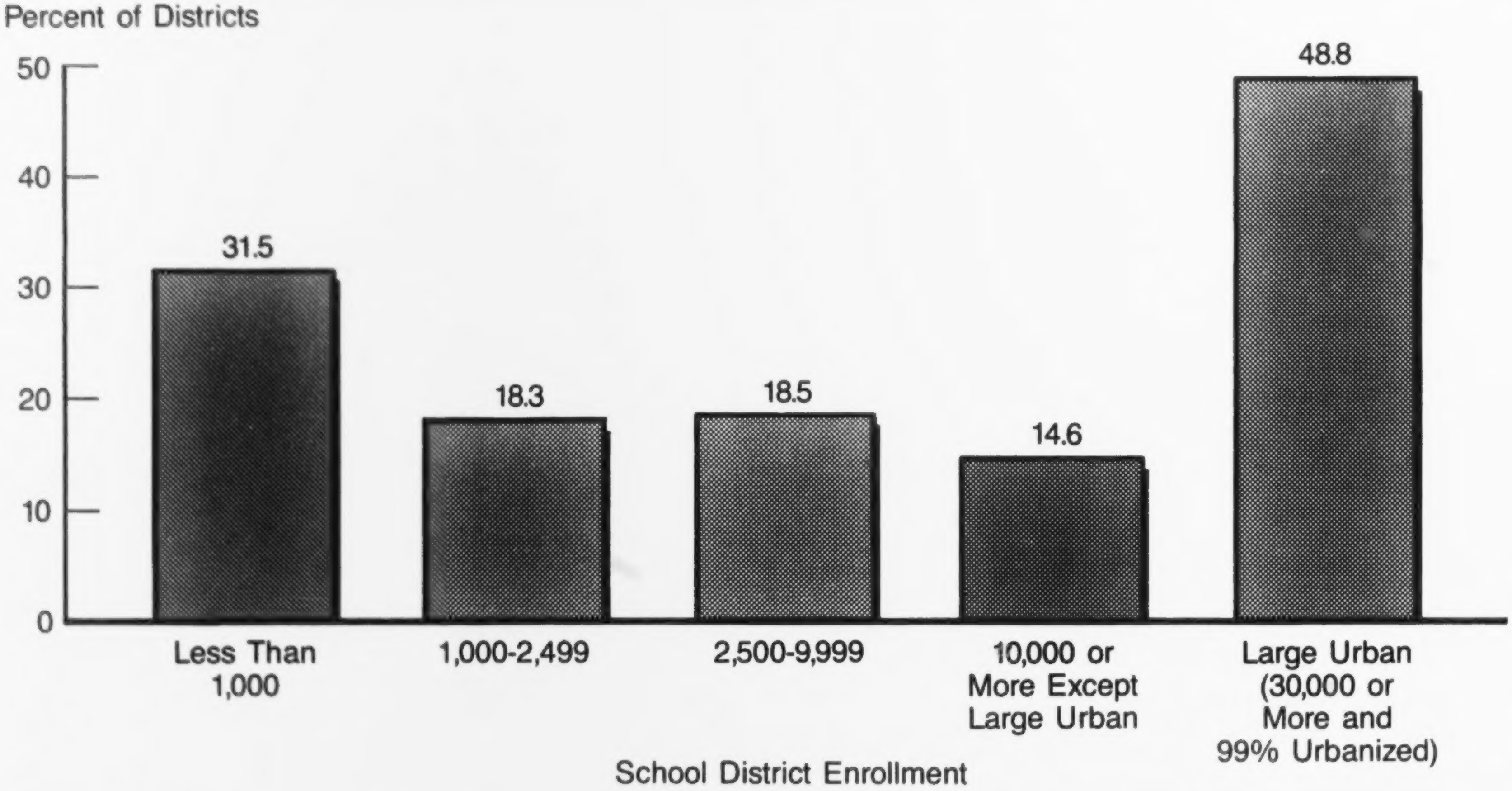

FIGURE READS: "Among all school districts with fewer than 1,000 students, 31.5 percent have poverty rates at or above 21 percent. Among school districts with enrollments between 1,000 and 2,499 students, 18.3 percent have poverty rates at or above 21 percent."

SOURCE: Reanalyses of 1980 Census (Appendix E, Part 2).

There also are relatively more high-poverty districts among the smallest category of districts. The average rate of poverty among small school districts is 17.4 percent. These findings should not obscure the fact that high concentrations of poverty exist elsewhere as well. Many examples of high poverty rates exist in districts of all sizes.

### Region

The distribution of district poverty rates by geographic region is presented in Figure 3.8. Nearly half of all Southern school districts (48.7 percent) serve high concentrations of poverty, a percentage roughly double the national proportion of such districts. In fact, the *average* poverty rate among Southern school districts is roughly equal to our cut-off rate for defining high poverty concentrations -- 21.6 percent. This contrasts with average poverty rates of 11.1 percent in the Northeast, 13.8 percent in the North central region, and 15.4 percent in the West. Figure 3.8 also indicates that relatively few districts in the Northeast serve high concentrations of poverty -- only 11.5 percent. Again, these are general tendencies, and there is considerable variation among district poverty rates within each of the regions. For example, the Northeast region has an average district poverty rate of 11.1 percent, yet one of its states, Maine, has an average district poverty rate of 19 percent. Among Maine's 278 districts, about one quarter have poverty rates below 10 percent, and one quarter have poverty rates exceeding 22 percent. And this variation occurs in the region which has less variation in its district-level concentrations of poverty than any other region.

Figure 3.8

## PERCENT OF SCHOOL DISTRICTS IN EACH REGION WITH 21 OR MORE PERCENT POOR SCHOOL-AGED CHILDREN

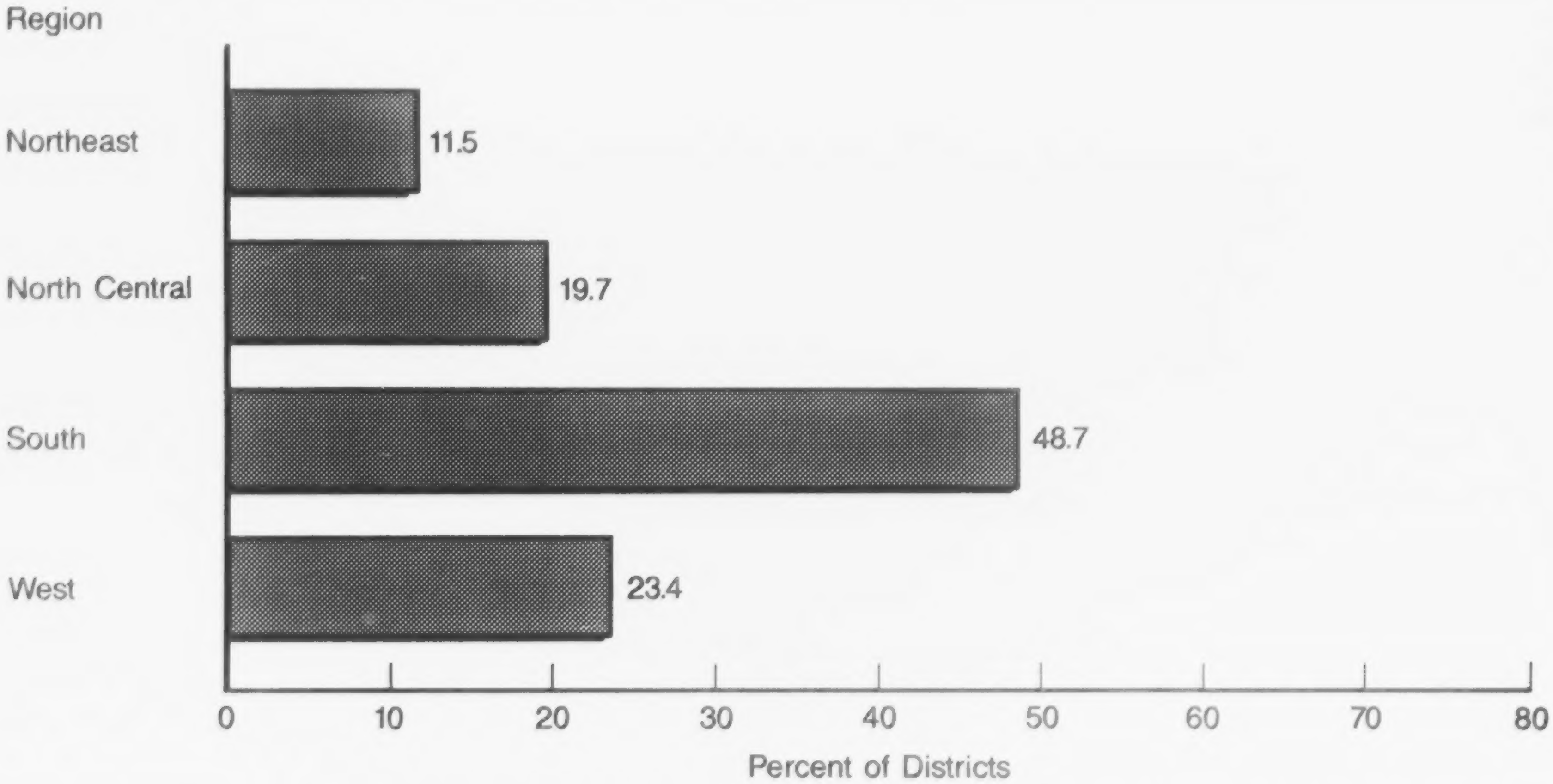

FIGURE READS: "Among all school districts in the Northeast region, 11.5 percent have poverty rates at or above 21 percent. Among school districts in the North Central region, 19.7 percent have poverty rates at or above 21 percent."

SOURCE: Reanalyses of 1980 Census (Appendix E, Part 2).

## Student Ethnicity and Language in High-Concentration Areas

Nationwide, school districts serve relatively small proportions of non-White students -- the average is about 8 percent.[10] Table 3.7 shows the average percent of non-White students and language minorities served by districts with differing concentrations of poverty. The proportions of non-White students increases gradually through the first three quartiles of districts, and then more than doubles -- from 7.2 to 17.5 percent -- between the third and fourth quartiles. Districts serving high concentrations of poverty have much larger average non-White enrollments than do districts with lower poverty rates. Further, of those districts serving mostly non-White students, nearly 92 percent are in our highest poverty-concentration quartile. Thus a school district with a predominantly minority student body is virtually certain to serve a high concentration of poor students. Just as Black children are more likely to experience long-term poverty, then, they are also more likely to reside in areas with high concentrations of poverty.

Analogous patterns are apparent with regard to the percentage of students who are limited in their proficiency with the English language. Though the percentages are smaller overall, the proportions of limited-English-proficient students increase gradually through the first three quartiles and then more than doubles from the third to the fourth quartile.

The districts we have identified as serving high concentrations of poor students constitute 25 percent of the nation's school districts. They also serve about 25 percent of all students nationwide.[11] But the data suggest that those 25 percent of the nation's school districts are far more likely to serve minority students and students whose proficiency in English

## Table 3.7

### Average Percent Non-White and Limited-English-Proficient Students by Poverty Quartile of District

| District Quartile | District Poverty Concentrations | Average Percent Non-White Students | (Standard Deviation[a]) | Average Percent of Limited-English-Proficient Students | (Standard Deviation[a]) |
|---|---|---|---|---|---|
| Lowest 25 Percent | 0 - 7% | 3.3 | 5.2 | .37 | 1.4 |
| Next Lowest 25 Percent | 8 - 12% | 4.6 | 7.0 | .47 | 1.5 |
| Next Highest 25 Percent | 13 - 20% | 7.2 | 10.0 | .64 | 1.8 |
| Highest 25 Percent | 21 - 100% | 17.5 | 20.4 | 1.40 | 4.3 |
| ENTIRE POPULATION | | 8.0 | 13.2 | .72 | 2.6 |

TABLE READS: "School districts in the lowest quartile serve between zero and 7 percent poor children, average 3.3 percent non-White students (with a standard deviation of 5.2) and average .37 percent students with limited proficiency in English (with a standard deviation of 1.4)."

SOURCE: Reanalyses of 1980 Census Bureau STF-3F Files (Appendix E, Part 2, Table 7).

[a] A standard deviation is a measure of the amount of variation within a group. Small standard deviations would indicate that the group is relatively homogeneous, while large standard deviations suggest heterogeneity. These standard deviations are relatively large.

is limited. They are not, however, the only school districts which have to educate high concentrations of poor students. Even a district with a relatively low overall poverty rate may have one or more schools which serve high concentrations of poor students. And these individual schools, as we saw above, are also more likely to be populated with minority students.

The students served by these school districts and schools have characteristics similar to the characteristics of children experiencing long-term family poverty. They are more likely to be Black, more likely to live in rural areas or small school districts, and more likely to live in the Southeast. Children experiencing concentrations of poverty also are likely to be in large urban areas, a characteristic not reported by those investigating long-term poverty. Because the data bases used to measure the two forms of poverty intensity -- long-term family poverty and concentration of poverty -- are different, it is not possible to determine the extent to which the same children experience both forms of intensity. However, the similarity between the two sets of demographic characteristics leads us to suspect that the same children may be experiencing both forms of poverty intensity.

### Low-Achieving Students

All of the analyses displayed above portray groups of students who, because of their poverty experiences, would be more likely to fall behind in school, and consequently be eligible for compensatory education. It is also possible to examine the characteristics of low-achieving students directly, without relying on a proximate characteristic such as census poverty status, length of time in poverty, or concentration of poverty.

However, systematic patterns of low achievement may be more difficult to discern than are systematic patterns of poverty, because virtually every community and every family income category contains some low-achieving students.

Though there are many sources of information about student achievement, few permit us to define the characteristics of those students in elementary, middle, and secondary grades who are not achieving well. One that does is the National Assessment of Educational Progress (NAEP).[12] NAEP recently revised its achievement measure and defined five levels of reading proficiency, ranging from what it calls "rudimentary" to what it calls "advanced" proficiency. Rudimentary skills are those that enable students to read a few simple sentences; basic skills enable students to read simple stories or expository passages; and intermediate reading skills permit students to read relatively lengthy stories and informational passages.[13] In all cases, the students must be able to do more than simply read the passages. They must also answer questions about the passages, with the questions demanding increasingly sophisticated thought processes. For the most advanced level, NAEP requires students to restructure or synthesize ideas presented in complex and sophisticated passages.

Because Chapter 1 focuses on students who are not achieving well in school, we draw on NAEP data to estimate the proportion of students who lack reading proficiency. Figure 3.9 shows the proportions of students whom NAEP found lacking rudimentary, basic, or intermediate reading skills in its 1984 assessment. While the vast majority of students have acquired rudimentary reading skills by the age of 17, many have not achieved intermediate proficiency by that age. If the goal of schooling were to

Figure 3.9

## PROPORTION OF STUDENTS LACKING RUDIMENTARY, BASIC, OR INTERMEDIATE READING PROFICIENCY IN 1984

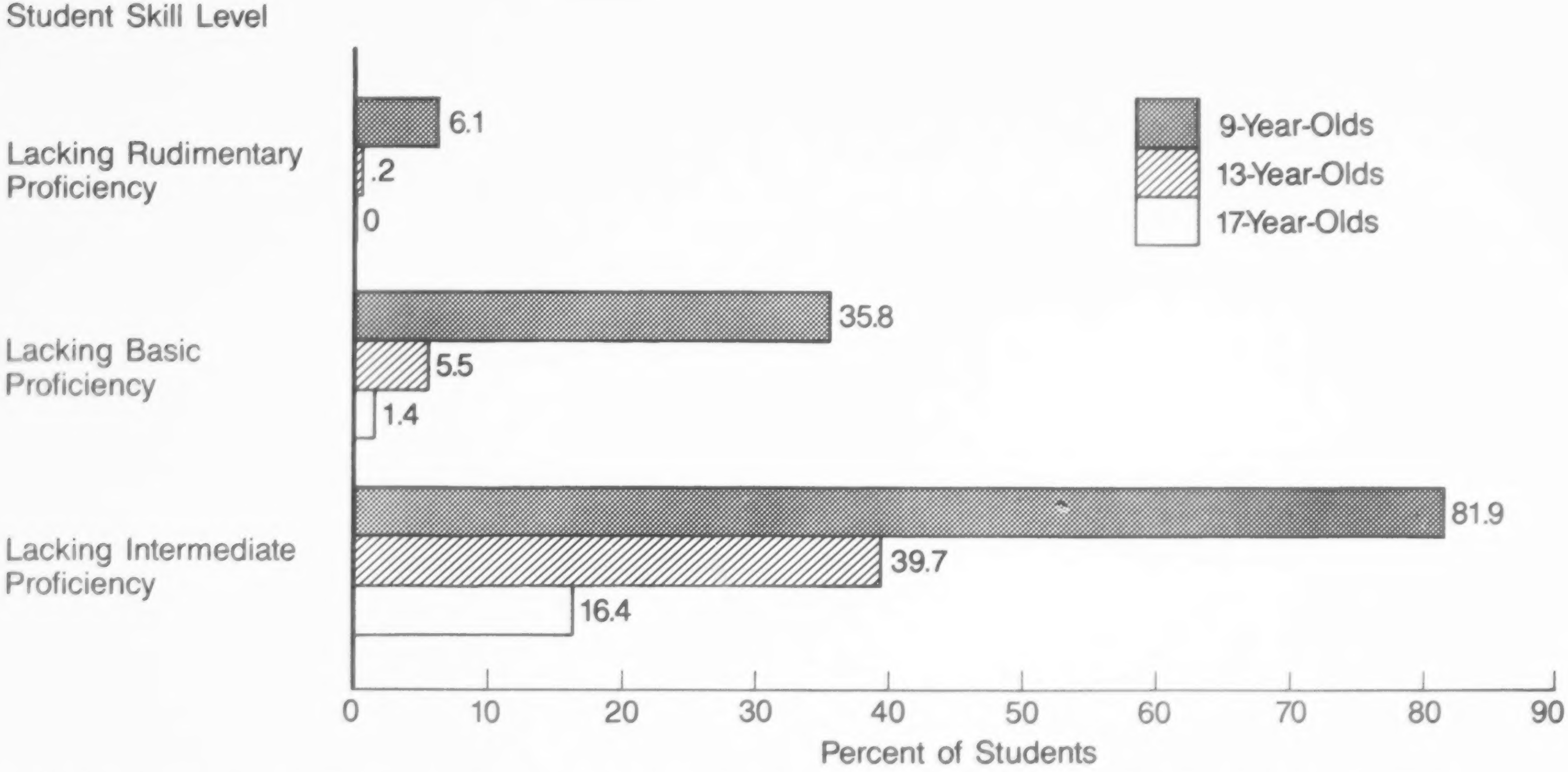

FIGURE READS: "In 1984, 6.1 percent of 9-year-olds lacked rudimentary reading proficiency, .2 percent of 13-year-olds lacked rudimentary proficiency, and no 17-year-olds lacked rudimentary proficiency."

SOURCE: National Assessment of Educational Progress, *The Reading Report Card: Progress Toward Excellence in Our Schools.* Princeton, NJ: Educational Testing Service, 1985. Data Appendix, pages 66-69.

assure that all 9-year-olds attained basic reading skills, and all 13-year-olds attained intermediate skills, these data would indicate that 35.8 percent of all 9-year-olds were behind and 39.7 percent of 13-year-olds were behind. In fact, it indicates that 16.4 percent of 17-year-olds had still not attained intermediate skills.

The NAEP data do not permit us to determine the family poverty status of these low-achievers, nor the intensity of their poverty experience. Several other student and family characteristics are described, however. Table 3.8 indicates the relationship between these characteristics and low-achievement rates. Low achievers are more prevalent among males, minority students, students residing in the Southeast, students whose parents lack high school degrees, and students who reside in disadvantaged inner city areas -- areas defined by NAEP as cities with populations exceeding 200,000, and with large proportions of their citizens on welfare or not regularly employed. Though NAEP defines some of its terms differently than we have in our earlier analyses, these characteristics are very similar to those of students who experience relatively more intense forms of poverty.

NAEP also provides information on the relationship between student achievement and three aspects of home life: the amount of reading material in the home, the number of hours the child watches television each day, and the amount of time the child devotes to homework. One of these, the amount of reading materials in the home, may in part reflect family income, but these three measures are also indicative of aspects of home atmosphere which other researchers have found to be related to student achievement. Findings regarding these items, shown in Table 3.9, are in the directions one would expect. Students were more likely to lack the skills we defined

## Table 3.8

## Proportion of Students with Varying Characteristics Who Lacked Reading Skills in 1984

| Student Characteristics | Percent of 9-Year-Olds Lacking Basic Proficiency[a] | Percent of 13-Year-Olds Lacking Intermediate Proficiency[b] |
|---|---|---|
| Male | 39 % | 44.5% |
| Female | 32.7 | 34.8 |
| White | 29 | 33.1 |
| Black | 60.7 | 64.7 |
| Hispanic | 56.2 | 60.6 |
| Parents with No High School Diploma | 50.9 | 59.5 |
| Parents with High School Diploma | 36.3 | 44.4 |
| Parents with Post-High School Education | 25.8 | 27.7 |
| Residing in: | | |
| - Northeast | 31.9 | 36.1 |
| - Southeast | 42.0 | 42.1 |
| - Central States | 31.5 | 37.9 |
| - West | 37.5 | 42.3 |
| - Rural Community | 43.4 | 42.3 |
| - Disadvantaged Urban Community | 55.3 | 62.4 |
| - Advantaged Urban Community | 19.4 | 20.5 |

TABLE READS: "Among male students, 39 percent of all nine-year-olds had not attained basic reading proficiency; 44.5 percent of 13-year-olds had not attained intermediate reading proficiency."

SOURCE: National Assessment of Educational Progress, The Reading Report Card: Progress Toward Excellence in Our Schools. Princeton, NJ: Educational Testing Service Report No. 15-R-01, 1985, pp. 66 and 69.

[a] According to NAEP, performance at this level suggests the ability to understand specific or sequentially-related information. The Reading Report Card, p. 15.

[b] According to NAEP, performance at this level suggests the ability to search for specific information, to interrelate ideas, and to make generalizations The Reading Report Card, p. 15.

## Table 3.9

### Proportions of Students with Varying Habits Who Lacked Reading Skills in 1984

| Characteristics[c] | 9-Year-Olds Lacking Basic Proficiency[a] | 13-Year-Olds Lacking Intermediate Proficiency[b] |
|---|---|---|
| 0 - 2 Reading Items in Home | 48.5% | 59.5% |
| 3 Reading Items in Home | 31.5 | 42.0 |
| 4 Reading Items in Home | 22.4 | 31.1 |
| 0 - 2 Hours TV Watched Per Day | 30.5 | 29.3 |
| 3 - 5 Hours TV Watched Per Day | 28.3 | 34.9 |
| 6 Hours TV Watched Per Day | 46.6 | 54.0 |
| No Homework Assigned Yesterday | -- | 41.8 |
| Did Not Do Yesterday's Homework | -- | 52.2 |
| Homework Took Less Than One Hour | -- | 36.5 |
| Homework Took One to Two Hours | -- | 31.2 |
| Homework Took More than Two Hours | -- | 34.0 |

TABLE READS: "Among all students with two or fewer types of reading material in their homes in 1984, 48.5 percent of nine-year-olds had not attained basic reading proficiency and 59.5 percent of 13-year-olds had not attained intermediate reading proficiency."

SOURCE: National Assessment of Educational Progress, The Reading Report Card: Progress Toward Excellence in Our Schools. Princeton, NJ: Educational Testing Service Report No. 15-R-01, 1985, pp. 66 and 69.

[a] According to NAEP, performance at this level suggests the ability to understand specific or sequentially-related information. The Reading Report Card, p. 15.

[b] According to NAEP, performance at this level suggests the ability to search for specific information, to interrelate ideas, and to make generalizations The Reading Report Card, p. 15.

[c] The specific questions used to gather this information are as follows. For reading matter, students were asked four questions -- whether their family received newspapers regularly, whether there was an encyclopedia in the home, whether there were more than 25 books in the home, and whether the family bought or subscribed to magazines regularly. The "scores" reported here refer to the number of positive responses to these questions. For television watching, the student was asked how much television he or she "usually watched in a day." For homework the student was asked specifically about yesterday's homework, and given the five possible answers listed here.

for them when there were fewer reading materials in their home, when they spent more time watching television, and when they spent little time on homework.

## Conclusion

Students who experience long-term family poverty or who reside in areas with high concentrations of poverty are more likely to belong to minority groups than are students experiencing less intense forms of poverty. They share other characteristics as well, and they share characteristics with those students who are not achieving levels of reading proficiency defined by NAEP. To the extent that students experiencing these intense forms of poverty live in different communities from other poor students, the census counts of poverty may under-estimate the incidence of low educational achievement in these communities.

## Notes to
## Chapter 3

1 Appendix E, Part 1, describes the census data and our analyses of it.

2 Congressional Research Service and Congressional Budget Office, Children in Poverty. Committee on Ways and Means, U.S. House of Representatives, U.S. Government Printing Office, 1985.

3 Daniel Koretz Poverty Among Children. Congressional Budget Office, 1984.

4 Congressional Research Service and Congressional Budget Office, op cit.

5 Unless otherwise noted, the statistics quoted throughout this section are taken from our own analyses of census data. The details of these analyses are reported in Appendix D, Technical Support for Chapter 3.

6 For an overview of this research, see Greg Duncan Years of Poverty, Years of Plenty. Ann Arbor, MI: University of Michigan Press, 1985.

7 Congressional Research Service and Congressional Budget Office. op cit.

8 Mary J. Bane and D. Ellwood "Slipping In and Out of Poverty: The Dynamics of Spells." Working Paper, Harvard University, 1983.

9 District analyses are based on school district enrollment data, taken from the Census Bureau's STF-3F file rather than from its March supplements. See Appendix E, Part 2. Though the districts were divided into quartiles, the sizes of the four groups differ due to ties in the proportion of poor children served.

10 The total percentage of non-white students is about 23 percent, but these students are not evenly distributed among school districts. Because so many districts serve very small proportions of minorities, while a few districts serve very large proportions, the average proportion served by districts in general is small.

11 The proportions of students in the four quartiles are 26.04 percent in the first quartile, 23.82 percent, 24.59 percent, and 25.54 percent in the highest quartile.

12 The National Assessment of Educational Progress (NAEP) samples students nationwide and gives all sampled students the same test. Thus, unlike the pot-pourri of testing systems used by State and local agencies across the country, NAEP provides a uniform national picture of student achievement. Second, NAEP assesses a representative sample

of students, in contrast to such other national testing systems as the college entrance examinations which are taken voluntarily. Finally, NAEP assesses students at different age-levels. It provides national estimates of the educational progress of 9-year-olds, 13-year-olds, and 17-year-olds. This last point is important for Chapter 1, since it serves mainly elementary, rather than secondary students.

13 National Assessment of Educational Progress, Reading Report Card: Progress Toward Excellence in Our Schools. Princeton, NJ: Educational Testing Service. Report NO. 15-R-01, 1985.

# Chapter 4
# Program Beneficiaries

## Overview of the Chapter

In this chapter, we examine the characteristics of those students who actually have been served by Title I or Chapter 1 programs. We find that:

- Relative to the population of school-age children, Title I/ Chapter 1 students are more likely to be poor, to belong to minority groups, to be enrolled in elementary grades, and to attend public, rather than private, schools.
- Provisions regarding the selection of schools and students do not always assure that the most educationally-deprived students will be served. Nearly 20 percent of students receiving math instruction in 1976 achieved above the 50th percentile on a math achievement test, and over 10 percent of those receiving reading instruction achieved above that level on a reading test. Yet some 60 percent of students scoring below the 25th percentile were not receiving services.
- The proportion of such less-low-achieving students being provided with compensatory education services depends in part on the population of low-achieving students available to be served by the school, and in part on the local decision to serve many versus a few children.
- Schools with fewer lower-achieving students available are more likely to serve relatively higher-achieving students, and unless they have very high concentration of poor students, schools with relatively large programs are also more likely to serve higher-achieving students.

Though the data on which these analyses are based are old, more recent data sources indicate that similar patterns of achievement levels exist among Chapter 1 students today, and will probably continue to exist unless Congress decides to restrict program participation in some way.

## A Profile of Program Beneficiaries

The purpose and provisions of Chapter 1 are such that one would expect its beneficiaries to differ from the general population of students. Funds are allocated among districts on the basis of their poverty rates, for instance, and districts are required to place programs in schools with the highest concentrations of poor students. Consequently, we would expect program beneficiaries more often to be poor. And because students must be selected on the basis of their academic achievement, we would expect their achievement to be low. Other characteristics of program beneficiaries, however, derive from local decisions. School districts can decide which grade levels of students to serve, and parents can decide whether to send their students to public or private schools. Thus, the grade levels or school affiliations of Chapter 1 students reflect school district and parent decisions, rather than legislative decisions. Figure 4.1 compares program beneficiaries to the school-age population on four characteristics: the poverty status of the students' families; the students' racial and ethnic backgrounds; the grade levels they attend; and whether they are enrolled in public or private schools.

No single source of data describes all of these characteristics of Chapter 1 beneficiaries. Consequently, we have drawn on a number of sources for this analysis. Figure 4.1 displays the most recent data available on each of these characteristics of students, comparing the proportion of such students within the Chapter 1 program with the proportion in the entire student population. The details regarding these comparisons are in Appendix F.

Figure 4.1

## PERCENT OF TITLE I/CHAPTER 1 STUDENTS AND ALL STUDENTS WITH VARIOUS CHARACTERISTICS

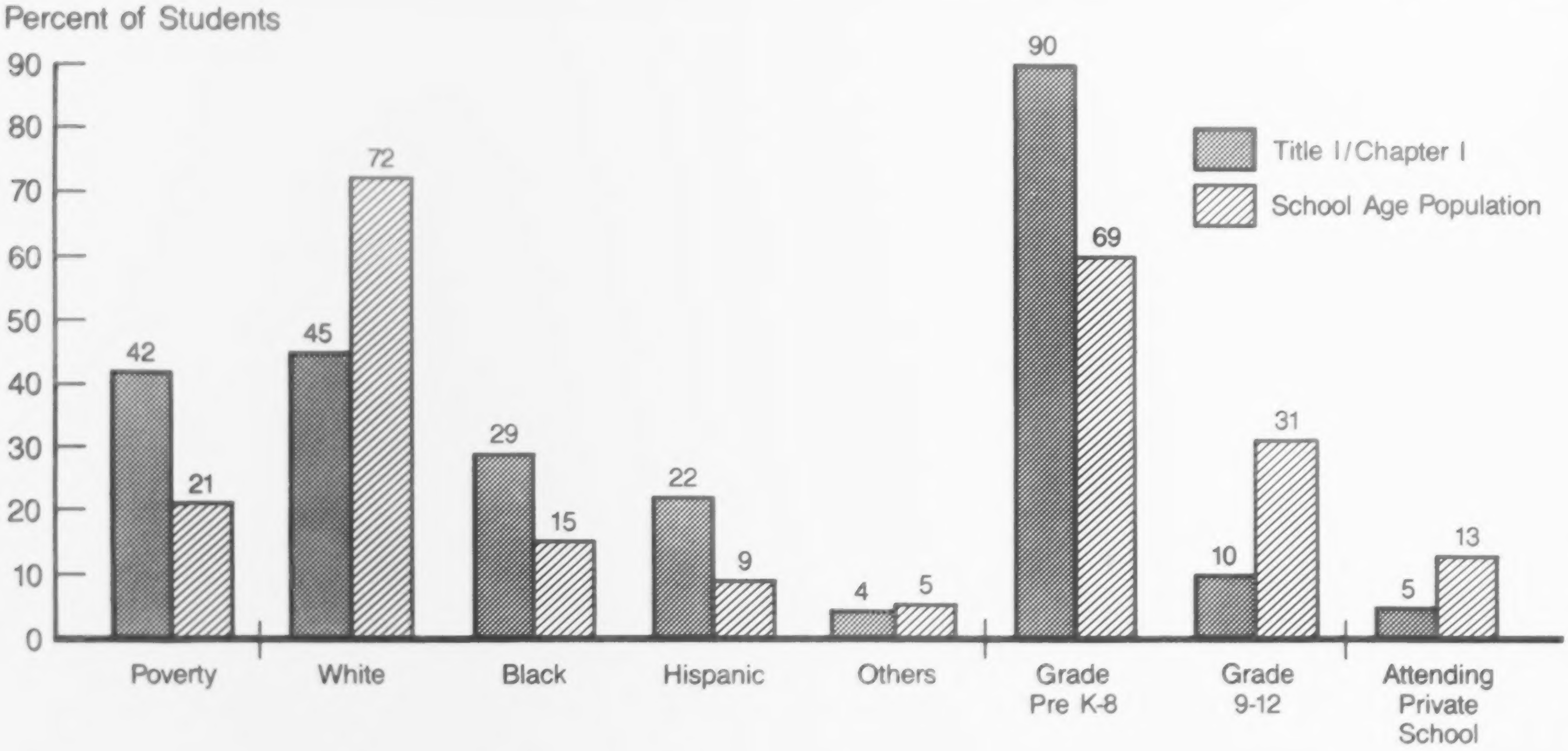

FIGURE READS: "Among Title I students in 1976-77, 42 percent were poor. Among the student population in general in 1976-77, 21 percent were poor."

SOURCE: Sustaining Effects Study (Poverty 1976-77), Title I Evaluation and Reporting System (Race and Ethnicity 1982-83; Grade Levels and Private School Enrollment, 1983-84) Appendix F, Part 1.

## Poverty Status

The most recent nationally-representative data describing beneficiaries' poverty status are from the Sustaining Effects Study. These investigators collected information both about family income and about the family's receipt of such public assistance as Aid to Families with Dependent Children and Foster Care Services during the 1976-77 school year. Because data from the Sustaining Effects Study (SES) are approximately ten years old, they cannot portray the current poverty rates of Chapter 1 participants. The SES data are also limited in that they included only Title I students who were in the elementary grades. Despite these limitations, these data are the only national data available on the poverty status of program beneficiaries. At that time -- school year 1976-77 -- approximately 42 percent of the elementary school Title I participants came from poor families as defined by the Orshansky poverty index, in contrast to 21 percent poor children in the total population of students in these grade levels.

Without more recent data on the poverty status of program participants, we cannot know the extent to which the proportion of program participants who come from poor families may have increased in recent years. However, we do know that both the number and proportion of children living in poverty have risen substantially since 1976.[1] Assuming that the relationship between poverty and achievement has held steady, and given the rise in the number of children from poor families, it would be reasonable to suppose that the program now serves a larger proportion of poor students than it did in the mid-seventies.

### Minority Status

Because minorities have higher poverty rates than White families do, one would also expect Chapter 1 beneficiaries more often to belong to minority groups. Compared to the school-age population, Chapter 1 does serve a relatively high proportion of Black and Hispanic students, and correspondingly, a relatively low proportion of White students. Figure 4.1 shows that in 1983 Black students constituted 29 percent of the Chapter 1 population, while approximately 15 percent of the total school-age population was Black. And approximately 45 percent of Chapter 1 participants were White, whereas 72 percent of the total school-age population was White.

While these statistics are in the direction one would expect, they contradict a common belief that the program serves primarily Black students. For every 100 Black students served by the program there are more than 150 White students served. This discrepancy occurs in part because even though White students have a lower poverty rate than Blacks, there are so many more White students altogether that they are likely to constitute the majority of any group -- rich or poor, old or young. The relatively high proportion of Hispanic beneficiaries -- 22 percent versus 9 percent -- also contradicts the notion that Chapter 1 is primarily targeted to Black students. The high participation rate among Hispanic students reflects in part their higher poverty rates, and probably in part their language proficiency as well.

The ethnic and racial composition of beneficiaries also reflects broader population trends. According to census data, the proportion of White students in the school-age population declined from 75 to 72 percent during the five years preceding our 1983 data, while the proportion of Hispanic children rose from 6 to 9 percent. In fact, the Hispanic population was the country's fastest growing minority population during the late 1970s, especially in large urban areas.[2]

While there is no single data source for examining trends in the ethnic mix of Chapter 1 participants, we present in Table 4.1 the data that are available. The racial and ethnic information in Table 4.1 are from separate data collection efforts which did not use comparable racial/ethnic definitions, though we have attempted to correct for some of the disparities in this reanalysis.[3] These data suggest that the growth of Hispanic and other non-Black minority populations in general has been accompanied by large increases in the participation of these groups in Chapter 1 programs.

There is also no straightforward way to measure trends in the English-language proficiency of program participants. We do know, however, that between 1979 and 1983, the number of beneficiaries receiving services labeled "English for limited-English Background" grew from 374,590 to 592,062, a 58 percent increase. These beneficiaries constituted approximately 7 percent of the program's public school participants in 1979 and approximately 12 percent of such participants in 1983.[4] By the 1983-84 school year, Chapter 1 programs provided this service to over three times as many students as ESEA Title VII Bilingual Education served through its basic and demonstration projects.[5]

Grade Levels

Figure 4.1 indicates that the Chapter 1 program is focused primarily on students in the elementary grades. Whereas less than 70 percent of all

## Table 4.1

## Change Over Time in the Racial and Ethnic Characteristics of School-Age Children and Title I/Chapter 1 Program Beneficiaries

| | School-Age Children (Age 5-18) | | Program Beneficiaries | |
|---|---|---|---|---|
| | 1978 | 1983 | 1976-77 (NIE Study) | 1982-83 (State Reports) |
| White | 75% | 72% | 54% | 45% |
| Black | 15 | 15 | 35 | 29 |
| Hispanic | 6 | 9 | 10 | 22 |
| Other | 4 | 5 | 2 | 4 |
| TOTAL | 100% | 101%[a] | 101% | 100% |

TABLE READS: "In 1978, White students constituted 75 percent of the school-age population. In 1983, they constituted 72 percent of that population."

SOURCES: School-age population figures based on reanalyses of March 1984 Current Population Survey (Appendix E, Table 1); 1976-77 Title I figures from the National Institute of Education, Evaluating Compensatory Education: An Interim Report on the NIE Compensatory Education Study, p. III-26; 1983-84 Chapter 1 figures from U.S. Department of Education, Office of Planning, Budget and Evaluation, Annual Evaluation Report, Fiscal Year 1984, pp. 101-103 based on data from the Title I/Chapter 1 Evaluation and Reporting System.

[a] Proportions do not total 100% because of rounding.

students are enrolled in the elementary grades (pre-kindergarten through grade 8), 90 percent of all Chapter 1 students are in these grades. Conversely, even though approximately 31 percent of all students are in grades nine through 12, only about 10 percent of Chapter 1 students are in these grades.

While these figures suggest a general preference to serve elementary grade levels, other evidence suggests that the preference is not as strong as it once was. Table 4.2 summarizes both program and general population enrollment trends from 1979 to 1984. While service rates among secondary students fluctuated throughout this time period, elementary service rates definitely declined. The number of elementary students being served decreased by 11 percent, even though elementary enrollment as a whole decreased only 1 percent during this 5-year period.

Private School Students

Policy makers' interest in private school students' participation in Chapter 1 programs has intensified since the Supreme Court's July 1985 ruling (Aguilar v. Felton) that Chapter 1 instructional services could not be provided in religiously-affiliated schools. The only national statistics available on private school beneficiaries, however, were collected prior to that decision.

Figure 4.1 indicates that even prior to the Felton ruling, Chapter 1 programs served a smaller proportion of private school students than was served by private schools nationwide. While 12.7 percent of all students were enrolled in private schools during the 1983-84 school year, only 4.6 percent of Chapter 1 students were enrolled in private schools that year.

## Table 4.2

## Title I/Chapter 1 Enrollments Compared to Total Elementary and Secondary Enrollments[a] (in Thousands)

| | Total Elementary Enrollment (Pre-K - 8) | Total Secondary Enrollment (9 - 12) | Title I/Chapter 1 Participants Pre-K - 8 | Title I/Chapter 1 Participants 9 - 12 | Percent of Elementary Enrollment Participating in Title I/Chapter 1 | Percent of Secondary Enrollment Participating in Title I/Chapter 1 |
|---|---|---|---|---|---|---|
| 1979-80 | 31,631 | 15,014 | 4,902 | 457 | 15.5% | 3.1% |
| 1980-81 | 31,666 | 14,652 | 4,809 | 493 | 15.1% | 3.4% |
| 1981-82 | 31,345 | 14,255 | 4,366 | 487 | 13.9% | 3.4% |
| 1982-83 | 31,356 | 13,896 | 4,280 | 420 | 13.6% | 3.0% |
| 1983-84 | 31,208 | 13,754 | 4,345 | 501 | 13.9% | 3.6% |

TABLE READS: "Total elementary enrollment during school year 1979-80 was approximately 31,631,000. Total secondary enrollment was about 15,014,000."

SOURCE: Elementary/Secondary Enrollment

U.S. Department of Education, National Center for Education Statistics, The Conditions of Education 1985 Edition, p. 18 for school years 1980-1984; U.S. Department of Education, National Center for Education Statistics, The Conditions of Education 1984 Edition, p. 14 for school year 1979-1980.

Title I/Chapter 1 Enrollment

Carpenter, Michael A., and Patricia A. Hopper, Synthesis of State Chapter 1 Data: Summary Report, draft (1985), p. 4.

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[a] Total does not include ungraded enrollments.

These relatively low service rates concern policy makers partly because they are low and partly because they have remained low for some time, despite recent increases in total private school enrollments. To some extent, these differences in service rates reflect differences in school and student characteristics. Students attending private schools are more likely to be from higher-income families and are more likely to be higher-achieving. Furthermore, most of the recent growth in private school enrollment has not been at the grade levels or in the types of schools which have traditionally participated in Chapter 1. Most of this growth has been at the pre-school level, in schools for handicapped students, and in evangelical Christian schools. Census data show that between 1980 and 1983 there was little, if any, growth in private school enrollments for grades 1 through 12. Yet private school kindergarten enrollment rose 35 percent over this period, and pre-kindergarten enrollment grew by 14 percent;[6] enrollments in private schools for handicapped students jumped from approximately 8,000 students during the 1975-76 school year to about 299,000 students in the 1982-83 school year; and enrollments in evangelical Christian schools more than doubled between school years 1975-76 and 1982-83, from approximately 344,000 to 913,000 students.[7]

None of these sectors participates heavily in Chapter 1. Only 7 percent of Chapter 1 beneficiaries are pre-kindergarten or kindergarten children, for instance, and evangelical schools often choose not to participate in Federal programs such as Chapter 1. Only 9 percent of the Chapter 1's private school students attend non-Catholic religiously-affiliated schools, even though these schools enrolled 25 percent of the total private school population.[8]

## Summary

This comparison of Chapter 1 beneficiaries to the total school-age population suggests that local decisions, legislation, and demographic trends all interact to define the population of program beneficiaries. The extent to which the program serves relatively more poor students, for instance, reflects the legislative priority given to poverty, while the proportions of minorities reflects the demographic relationship between race, ethnicity, and poverty. That the program serves relatively more elementary students, on the other hand, reflects partly a pedagogical preference to serve students in early grades, when they are first learning to read and to calculate, and partly a response to administrative complications and funding constraints associated with serving secondary students.[9] Finally, services to private school students reflect decisions made by parents as well as by the schools themselves.

The interaction among these several influences is built into the design of the legislation. Though the legislation specifies an emphasis on educational deprivation, for instance, it leaves decisions regarding the grade levels, subject matters, and general character and quality of services to local program managers, on the assumption that these decisions should reflect local circumstances.

## Unserved Students

Apart from knowing the characteristics of students who receive Chapter 1 services, policy makers often want to know whether there are eligible students who are not served. The concept of eligibility is a difficult one to apply to the Chapter 1 program since, as we mentioned earlier, there is nothing inherent in a child which makes him or her "eligible" for Chapter 1 services. Unlike the intended beneficiaries of other federal programs --

students who are handicapped, for instance, or limited in their proficiency with the English language, the students who are intended to benefit from Chapter 1 cannot be identified by any of their personal characteristics. Being "eligible" for the Chapter 1 program means both living in an eligible "attendance area", usually one that equals or exceeds a district's average level of poverty; and being among the lowest-achieving students attending the school.

Program regulations give local program managers considerable flexibility by defining educationally-deprived children as those "whose educational attainment is below the level that is appropriate for children of their age."[10] However, there is no agreed-upon cut-point for distinguishing "educationally-deprived" students from other students. Student academic performance is distributed along a continuum, and no particular cut-off point makes more intuitive sense than any other. One set of analyses undertaken by the Sustaining Effects Study found that a cut-off at the at 35th percentile most closely approximated teachers' judgments about which students needed compensatory-education services.[11] We also reported in chapter 3 that about 35 percent of 9-year-olds lacked basic reading proficiency, thus indicating that a criterion that includes 35 percent of all students may be reasonable. Other analysts have proposed the use of the 17.8th percentile rank to define educational deprivation, on the grounds that this threshold matches the percentage of the school-age population counted as eligible by the program's allocation formula.[12] One could also argue that since the program actually serves only 10.8 percent of the school-age population, the cut-off score should be the eleventh percentile rank. Such an extreme cut-off score, however, does not take into account the fact that other programs, such as special education and bilingual education, may also serve these very-low-scoring students.

At one time the General Education Provisions Act (GEPA) defined educationally-deprived children as those who were achieving one or more years behind the achievement expected at the appropriate grade level for such children.[13] This definition was later removed, in part because it had different meanings in different grade levels. For example, a high school senior one year behind grade level would be relatively less far behind in school than a third grader who was one year behind grade level. And it is not clear that a first grade student could be a year behind. Some opponents of this rule also felt that the definition reduced local discretion in targeting program services.

Today, neither law nor regulation specifies a criterion for defining educational depriviation, though the 50th percentile, or national median, has become the upper limit of convention. The median is used on the grounds that it is the only technically-accurate definition of "average", or "the level that is appropriate for children of their age", and on the grounds that districts whose overall achievement levels are relatively high must use a cut-off score as high as the 50th percentile to find enough students to fill their programs. The 25th percentile or quartile standard is also used, often by researchers, because of its analytic convenience. The quartile standard represents 25 percent of the population and consequently should encompass most program beneficiaries since only 10.8 percent of the school-age population is served with Chapter 1 funds.

But defining an appropriate cut-off score is not the only problem associated with defining "eligible students." Educationally-deprived children do not automatically receive Chapter 1 services because not all districts participate in the program and not all schools within participating districts are eligible to offer program services. A child can only be eligible if his or her school is eligible.

Despite these complications, we do know that not all eligible students actually receive services. If funds are short, not all grades within participating schools are included in the program and not all educationally-deprived students in participating grade levels are served. Both legislative provisions and local program design decisions limit services to certain areas. Consequently, educationally-deprived children who are not located in these areas or grade levels do not receive program services.

Attempts are frequently made to estimate the number of students who are "eligible" for services and to compare that figure with the number of students who are actually served by the program. For example, the National Coalition of Advocates for Children estimated that "at the peak of federal support [1980] less than half of those eligible were served."[14] The Council of Great City Schools, the Committee for Education Funding, and the Children's Defense Fund have also stated that less than half of all eligible students receive Chapter 1 services.[15] The U.S. Department of Education has recently estimated that Chapter 1 serves between 70 and 78 percent of the eligible populations.[16]

When the National Institute of Education conducted its first Congressionally-mandated study of com[illegible]atory education, it asked a sample of school principals to estimate the number of students in their schools who needed compensatory education services, according to their own achievement score criterion. These numbers were then contrasted with the number of students counted for purposes of allocating program funds to the districts -- that is, the number of students who were poor, neglected or delinquent, or migratory. NIE found that the number of "eligible" students -- those whom principals thought needed service -- was about half the number of children counted by the formula.[17] The contemporary parallel to that ratio is a bit higher. The number of children counted for purposes of formula allocation in 1980 was 8.3 million, while the number of children served was 5.4 million, or 65 percent of the formula count. As a method of estimating the proportion of eligible students who are not served, however, this technique is wanting, for there is not a direct correspondence between being counted for formula allocation purposes and being eligible for program services. The specific students who are deemed eligible for service need not be the same as those counted for purposes of allocating funds.

Further, surveys of principals' or district program directors' estimates of need are not the same as actual tallies of children. Direct measures of children's achievement levels are available only from the Sustaining Effects Study, which is now ten years old. Using the SES data, and applying a variety of definitions of eligibility to them, we have generated several estimates of the proportion of eligible students who were unserved in 1976. The findings are shown in Table 4.3. This table indicates that well over half of eligible students were not served by the program in 1976, regardless of which definition of eligibility is used.

Table 4.3

Percent of Eligible But Unserved Students, Using Different Definitions of Eligibility

| Criteria for Eligibility | Percent Not Served by Title I in 1976 | Percent Not Served by Any Compensatory Education Program in 1976 |
|---|---|---|
| Poverty Only | | |
| All Poor | 68.6% | 57.0% |
| Poor in Title I Schools | 68.2 | 54.4 |
| Achievement Below the 25th Percentile | | |
| All Low Achieving Students | 64.9 | 47.6 |
| Low Achieving in Title I Schools | 60.9 | 41.7 |
| All Poor and Low Achieving | 57.8 | 41.6 |
| Poor and Low Achieving in Title I Schools | 55.1 | 37.9 |
| Achievement Below the 50th Percentile | | |
| All Low Achieving Students | 72.9 | 58.0 |
| Low Achieving in Title I Schools | 69.7* | 53.0* |
| All Poor and Low Achieving | 62.7 | |
| Poor and Low Achieving in Title I Schools | 60.4 | 44.8 |

TABLE READS: "Among all poor elementary students, 68.6 percent did not receive Title I services in 1976, and 57.0 percent received no compensatory education."

SOURCE: Reanalyses of Sustaining Effects Study data. Appendix F, Part 2.

* These are students considered eligible under current convention.

The legally-correct definition of eligibility encompassed all low-achieving children who attended a Title I school. The proportion of these students who were not served ranged from 47.6 percent, using a 25th-percentile rank definition of eligibility and counting those students who received no compensatory education at all, to 69.7 percent using the conventional 50th percentile definition and counting only those students who did not receive Title I services in particular.

While these estimates seem high, they may actually be low because they are based only on elementary schools, those most commonly involved in the program. If similar calculations were to be made in secondary schools, where fewer students are served, the estimates of unserved eligible students probably would be larger.

Given the size of these figures, it is worth considering hypotheses that might account for them. One hypothesis is that school districts are providing services that are too expensive, and that more efficiently-designed programs would free up funds to serve more students. School districts have considerable latitude in determining how much money they want to put into each child's compensatory education program, and may base this decision on the local cost of educational goods or on the kind of the instructional strategies deemed by the district to be most appropriate for its students. But the more dollars spent on each child, the smaller the number of students who can participate. While the hypothesis may seem plausible, it is not supported by available evidence regarding selection practices. According to the District Practices Study, the most common motive guiding school and student selection procedures was to "serve as many schools/students as possible." Some 58 percent of district program directors claimed this goal, whereas only 6 percent chose to "concentrate service on a small number of schools or students."[18] The preference for spreading services is also apparent in the number of schools that currently operate programs. Some 70 percent of all elementary schools participate in the program, and roughly 36 percent of all secondary schools.[19] It seems unlikely that many districts are leaving eligible students unserved because they are providing overly expensive programs to a few students.

The second hypothesis is that program funds are not sufficient to support service for all eligible students. According to this hypothesis, the proportion of eligible students left unserved represents a natural byproduct of the complex selection rules applied by school districts to delimit their services from all possible eligible children to those most in need. School districts can delimit service, for instance, by restricting the program to only a portion of all eligible schools, to only certain grade levels, or to only the lowest-scoring students, in order to assure that those who do receive services receive a program of sufficient size, scope and quality. This hypothesis seems likely since our analysis indicated that even using the relatively strict 25th percentile definition, 47.6 percent of eligible children received no compensatory education services at all.

There is one other hypothesis, however, that could account for these figures: it is possible that the large numbers of unserved students occur because services are instead provided to other, higher-scoring students. In spite of the various attempts by Congress to delimit Title I and Chapter 1 students to the most educationally-deprived students, districts may still be serving many relatively less-low achieving students and may simultaneously be missing many of the lowest-achieving students. The merits of this hypothesis are discussed in the following section.

## The Poverty and Achievement Status of Program Recipients

Because the selection of students for Chapter 1 depends on the selection of schools, the selection of grade levels, the selection of subject matters, and the availability of other compensatory education services, it is difficult to know who actually is served and whether these students are more educationally deprived than other students. Over time, Congress has repeatedly expressed interest in knowing whether the program is reaching the most educationally-deprived students.[20]

The most frequently cited evidence regarding the nationwide proportions of low-achieving or non-low-achieving students who are served by the program comes from the Sustaining Effects Study. Table 4.4 summarizes the SES data regarding the poverty and achievement status of students who received Title I or other education programs in 1976 while attending school in grades two through six. The first column shows the educational placements of those children who would normally be considered most likely to need compensatory education in reading; that is, children whose families were poor according to the Orshansky poverty index, and whose reading achievement scores fell at or below the 50th percentile on the Comprehensive Test of Basic Skills. It shows that over 32 percent of such students received Title I reading services or a combination of Title I and some other compensatory education service, and an additional 14 percent received other compensatory education in reading. The remaining students in this category -- both poor and scoring below the 50th percentile --

## Table 4.4

## Distribution of Poor and Low-Achieving Students Among Compensatory Reading Programs

| | Students Who Were: | | | |
|---|---|---|---|---|
| Selection Status for Compensatory Education in Reading | Both Poor and in the Bottom 50 Percent in Reading Achievement | Not Poor, But in Bottom 50 Percent in Reading Achievement | Poor and In Top 50 Percent in Reading Achievement | Not Poor and in the Top 50 Percent in Reading Achievement |
| Title I Reading Alone or with Other Compensatory Education in Reading | 32.7% | 20.4% | 4.9% | 2.7% |
| Other Compensatory Education Only in Reading | 14.4 | 14.9 | 8.1 | 6.3 |
| No Compensatory Education in Reading, Though in a Title I School | 46.7 | 52.3 | 78.8 | 78.5 |
| No Compensatory Education in Reading, and Not in a Title I School | 6.2 | 12.4 | 8.2 | 12.4 |
| TOTAL | 100.0% | 100.0% | 100.0% | 99.9%[a] |

TABLE READS: "Of all students who were both poor and in the bottom 50 percent in reading achievement, 32.7 percent received Title I services. Of all students who were not poor but were in the bottom 50 percent in reading, 20.4 percent received Title I services."

SOURCE: Reanalyses of Sustaining Effects Study data (Appendix F, Part 2, Table 4e.)

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[a] Proportions do not add to 100 percent due to rounding.

received no compensatory education reading services, even though most of them attended Title I schools. The second column indicates the placements of children who were not poor, but whose reading achievement was at or below the 50th percentile. Taken together, these two columns describe 50 percent of the student population, the lowest-scoring 50 percent. The third and fourth columns indicate the placements of children whose achievement scores were above the 50th percentile rank.

The first and fourth columns provide the strongest contrast. The first column summarizes the placements of those students who are both poor and in the lowest-scoring 50 percent of the population, and the fourth column summarizes placements of students who are neither poor nor in the lowest 50 percent in reading achievement scores. Of the four groups listed here, those in the fourth column are the least likely to need compensatory education assistance. And the majority of students in the fourth column did not receive compensatory education. Only about 3 percent of these students were selected for the Title I program, and around 6 percent were selected for other compensatory education programs. Some 90 percent received no compensatory education services.

However, the size of this fourth group is large enough that even a 3 percent service rate encompasses a large number of students. Consequently students from this column constitute a relatively large proportion of program beneficiaries. While the proportions displayed in Table 4.5 suggest that the program selection procedures do tend to yield the most educationally-deprived students, the findings look considerably different when the characteristics of program participants themselves are examined.

Figure 4.2 displays the composition of students who received Title I reading and math services, respectively, in 1976. Over half of these students scored below the 25th percentile rank, and around 90 percent scored below the 50th percentile rank. For the most part, districts were serving students who were eligible for Title I services, according to either percentile rank definition. However, over 10 percent of students receiving reading instruction were achieving above the 50th percentile rank, and nearly 20 percent of students receiving math instructions socred above that level. Further, those who were served were not the most educationally deprived. Nearly half of the program beneficiaries had achievement scores above the 25th percentile rank, yet Table 4.3 indicates that some 60 percent of students scoring below the 25th percentile rank were not receiving services.

These findings raise questions about the procedures that could or should be used to select students for participation in Chapter 1 programs. There are several aspects of local selection practices that could lead to the provision of services to relatively less needy students, while simultaneously denying services to lower-achieving students, and none of them necessarily implies malfeasance on the part of State and local officials.

First, districts may use imprecise tests to select their students. Such tests could permit higher-achieving students to receive erroneously low test scores, and lower-achieving students to receive higher scores. This possibility is especially likely among young students -- those in preschool, kindergarten, and first grade, an age span during which children

Figure 4.2

## PROPORTION POOR AND NON-POOR STUDENTS RECEIVING TITLE I READING AND MATH SERVICES BY ACHIEVEMENT PERCENTILES

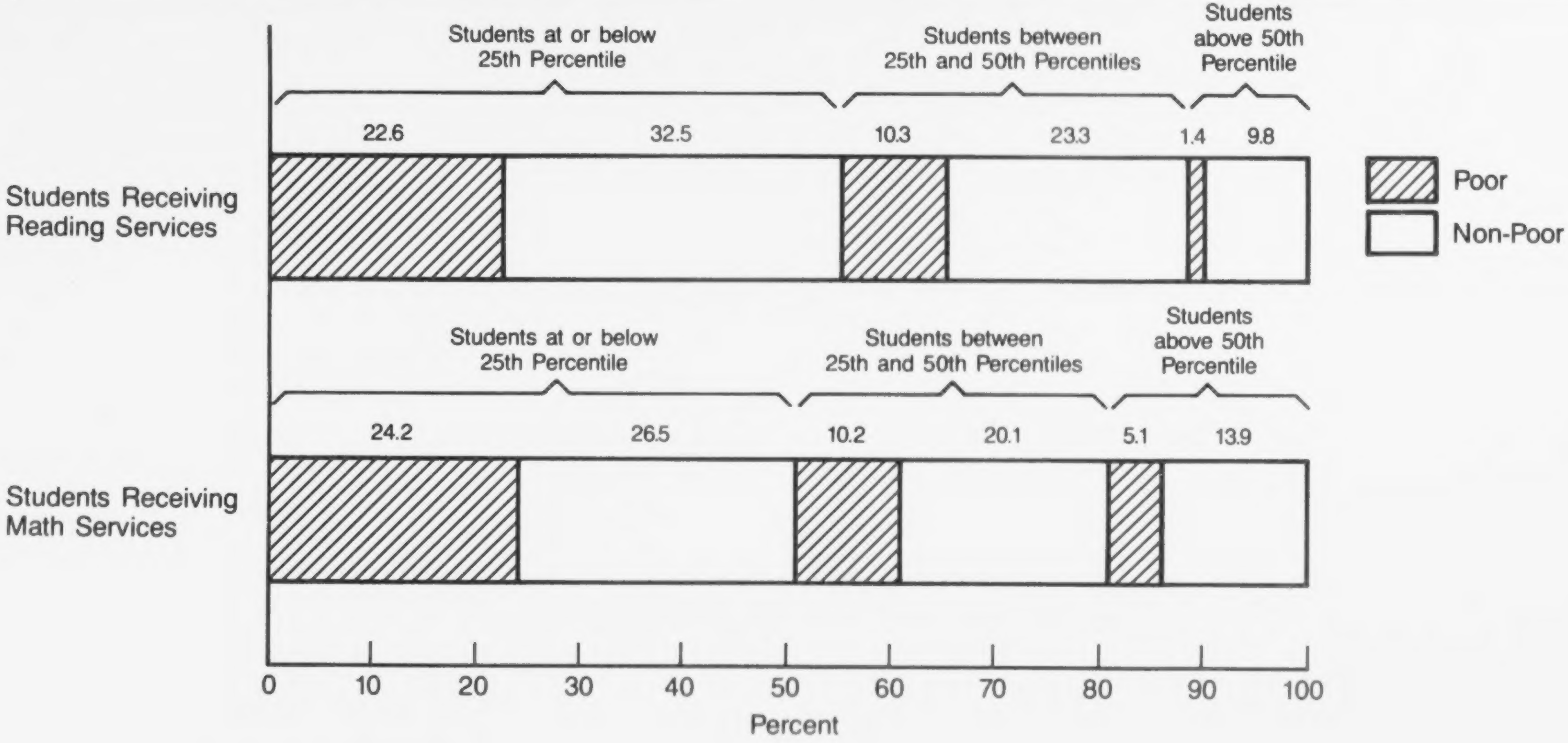

FIGURE READS: "The majority of students receiving Title I reading services scored at or below the 25th percentile in achievement. The larger portion of these students came from non-poor families."

SOURCE: Reanalyses of Sustaining Effects Study data (Appendix F, Part 2, Tables 3 and 4).

are extremely difficult to accurately assess. During the 1983-84 school year approximately 19 percent of Chapter 1's recipients attended these three grade levels.[21]

Second, most districts limit services to only a few grade levels, even though they have low achievers enrolled in all grades. They may, for instance, limit services to the second and third grades, on the grounds that these are the grade levels in which students are acquiring the basic skills that will help them through the rest of their school years. If there are not enough extremely low-achieving students within these grades to fill the program classrooms, they add students with slightly higher achievement scores. Thus these districts are serving the lowest-achieving students within these grade levels, though several of the students served may score higher than some unserved students in other grade levels.

Third, schools may spread their funds across a large number of students, in order to maximize the number of students served. When this strategy is carried out in conjunction with a grade restriction policy, a school could, in principle at least, serve a rather large number of students whose achievement scores are at, near, or even above the 50th percentile rank within the selected grade levels, while students with much lower achievement scores in other grades go unserved.

Fourth, school districts may serve their lowest-scoring students with other programs such as special education or bilingual education, so that their Chapter 1 program would be serving the lowest-scoring students who remain unserved after these programs were provided. Since the SES investigators did not document services other than compensatory education, it is possible that some of the low-achieving students listed as "unserved" in Table 4.3 actually did receive some form of special services. However, the SES researchers purposely omitted from their study any schools that were labeled as special-education schools or which served large proportions of limited-English-proficient students. They also eliminated individual students if there was evidence that the students were handicapped or limited in their English proficiency. Thus students likely to receive these other services were not likely to be included in this analysis.

One final hypothesis that could account for this pattern of services is that the higher-scoring students who are served and the lower-scoring students who are not served do not attend the same schools. A school with a high concentration of poor students, for instance, may use the 25th percentile rank as its cut-off score to select Chapter 1 participants, and may still have many students below that mark who remain unserved. Another school may have so few students scoring below the 25th percentile that it must extend its selection criterion to the 50th percentile rank in order to fill its Chapter 1 program. The first school must deny services to students below the 25th percentile rank, while the second is able to serve students above that rank. When data are combined across schools, as they are by the SES, the net result could appear to be misplaced services even though each school is behaving within the bounds of the law and regulation.

To determine whether and how schools differ in the students they served, we divided the 156 schools in the Sustaining Effects study in two ways: first by the extent to which scores of Title I students were concentrated below the 25th percentile rank versus being spread above that mark, and second by the extent to which the local Title I program served many versus only a few of all possible students in the school who scored above the 25th percentile rank. Table 4.5 summarizes the differences among the resulting groups of schools in the nature of the populations they served and in the types of students they selected for Title I.

Schools in the first two columns served relatively more higher-scoring students with Title I funds than did those schools in columns 3 and 4, but the circumstances surrounding their program designs were somewhat different. Schools in the first column had fewer minority students, fewer poor students, lower rates of student mobility, and fewer students scoring below the 25th percentile rank. These data suggest that the schools in the first column had less need for this program than did other schools. In fact, even with their decisions to operate small programs, they still served many relatively higher-scoring students.

Schools in the second column also served more relatively higher-achieving students. But their Title I programs were almost twice the size of the Title I programs operated by schools in the first column. These schools are worth special examination for two reasons. First, they were the most common type of school, and second, they provided Title I services to more relatively higher-achieving students than did any of the other groups of schools.

In contrast, schools in the fourth column also operated very large programs -- larger than those in any other group. Yet because they had more low-achieving students to start with, they were still able to concentrate their programs primarily on students scoring below the 25th percentile, and to serve only a handful of students who scored above the 50th percentile.

## Table 4.5

## Characteristics of Schools with Different Student Selection Practices

| | Scores of Title I Students Were Not Concentrated on Lowest Achievers | | Scores of Title I Students Were Concentrated on Lowest Achievers | |
|---|---|---|---|---|
| | Small Program | Large Program | Small Program | Large Program |
| **Title I Program Population** | | | | |
| Total Percent Served by Title I (Reading Program) | 9.9 | 21.5 | 11.9 | 30.3 |
| Percent of Title I Students Below 25th Percentile | 44.8 | 40.2 | 72.1 | 65.1 |
| Percent of Title I Students Between 25th and 50th Percentile | 39.2 | 38.4 | 23.6 | 26.8 |
| Percent of Title I Students Above the 50th Percentile | 15.7 | 21.6 | 4.6 | 8.1 |
| **Total School Population** | | | | |
| Percent Minority | 3.9 | 15.9 | 28.3 | 40.8 |
| Percent AFDC | 13.1 | 25.1 | 24.7 | 42.9 |
| Percent Free Lunch | 16.0 | 36.9 | 45.3 | 65.9 |
| Percent Mobile | 15.1 | 17.4 | 19.0 | 29.2 |
| Percent Below 25th Percentile (Reading Achievement) | 20.6 | 23.6 | 33.7 | 45.0 |
| Number of Schools in Analysis: | 22 | 51 | 37 | 44 |

TABLE READS: "In schools in column 1, 3.9 percent of the student body are members of minority groups. In schools in column 2, 15.9 percent of the student body belong to minority groups."

SOURCE: Reanalyses of Sustaining Effects Study data. (Appendix F, Part 2, Table 10a).

These data show that schools varied considerably in the nature of students they served with their Title I funds. These data further suggest that the extent to which the program is focused tightly on the lowest-achieving students in a school depends in part on the characteristics of the student body as a whole, and in part on the local decisions to serve large or small proportions of available students.

With regard to the characteristics of the student body, the legislative preference given to schools with high poverty rates should increase the likelihood that services will find their way to the most educationally-deprived students. However, under the law, a district must serve only 10 poor children to receive a Chapter 1 grant, so that around 90 percent of all school districts participate in Chapter 1, and many have relatively low poverty rates. Further, Chapter 1 provides a number of options regarding how districts select schools to participate. Districts may operate the program at grade spans of their own choosing, and then consider for eligibility only those attendance areas whose schools serve the selected grade spans. They may define concentrations of low-income children by either a number or a percent of all children, or both. Districts may also use up to six other options or exceptions to the general requirement that they serve their schools, from highest to lowest, in order of poverty concentrations (e.g., "no wide variance," "grandfathering", and "25 percent" options). By 1981, many districts were using one or more of these options.[22] These school selection procedures are flexible enough that districts now serve 70 percent of all elementary schools and 36 percent of all secondary schools. Consequently, many schools participating in Chapter 1 may have relatively low poverty rates, and concurrently fewer low-achieving students as well. In this analysis, 22 schools, or 14 percent of the sample, had relatively small proportions of low-achievers and these schools served more higher-achieving students than did schools in most other categories.

With regard to the decision to serve a large versus a small group of students, the current rules leave this matter to local discretion. Our analysis indicates that the 51 schools in the second column constituted both the largest proportion of schools in the study and the group of schools with the largest proportion of high achievers in their Title I programs. Large programs do not always result in services to higher-achieving students, however, for schools with high concentration of poor children have such large proportions of low-achievers that even very large programs can be narrowly targeted.

It might be reasonable to suppose, since these data are ten years old, that districts are doing a better job now of targeting services on the most educationally-deprived students than they were in 1976. This could occur because districts would be more familiar with the legislative intent and provisions now than they were then, or it could occur because districts have smaller program allocations today, relative to the cost of education, and are therefore forced to restrict their services to those most in need. However, there are several reasons for doubting this.

First, higher-scoring program participants do not appear equally in all types of schools, but instead appear most often in schools with fewer low-achieving students. Therefore, to the extent that the program continues to operate in such a large fraction of elementary schools -- 70 percent -- it is likely to serve relatively higher-achieving students.

Second, evidence regarding district responses to budget reductions indicates that districts use a variety of methods to curtail costs, but most of them would not alter the patterns of achievement among participating students. For instance, districts may eliminate a subject matter or a grade level in which the program will operate, or reduce the level of services provided to each student. According to the District Practice Study (DPS),[23] grade eliminations were especially common among the secondary grade levels when local Title I directors were faced with budget cuts, and some subject matters, such as vocational education and special education were also frequent candidates for reduction or elimination. Neither of these methods of responding to budget reductions would result in narrowing services to lower-achieving students. Reductions in subject matters or grade levels would retain the same diversity of achievement levels among participating students as were present before. And reduction in the costs of services would not alter the composition of students in any appreciable way. Further, reanalyses of the DPS data indicate little relationship between budget changes and changes in the number of students served. Districts are almost as likely to retain the same number of students in the face of a budget cut as they are to decrease the number of students served. Some districts even increased the number of students served.[24]

Finally, data reported by States regarding the test scores of participating students also suggest that these achievement patterns among participating students probably still exist. The average percentile ranks among elementary students entering Chapter 1 reading programs in 1983 ranged from 21 to 23, depending on grade level and testing schedule, and in mathematics the averages ranged from 20 to 35.[25] Usually, about half the students tested have scores above the average and half below, so that the distribution of these scores would probably be very similar to the distributions shown in Figure 4.2. Further, the average achievement scores vary tremendously among States as well, with some States reporting very high averages. For instance, the achievement level of second-grade reading students in New Jersey is the 43rd percentile, and the average second-grade math student in Tennessee scores at the 45th percentile.[26] If half the students tested in these areas scored above these averages, it is reasonable to suppose that many of these students are not eligible for Chapter 1 services even using the lenient 50th percentile definition, and that even those who are eligible are not necessarily the most educationally-deprived students available to be served. Many students scoring above the 25th percentile continue to be served, while many below that line are not.

## Conclusion

While earlier chapters suggested that the legislative reliance on census poverty counts may, with some important exceptions, result in more funds reaching the counties and school districts with the greatest educational need, findings presented in this chapter suggest that the provisions regarding the selection of schools and students do not always assure that the most educationally-deprived students will be served. Nearly 20 percent of students receiving math instruction in 1976 achieved above the 50th percentile on a math achievement test, and over 10 percent of those receiving reading instruction achieved above that level on a reading test. Yet some 60 percent of students scoring below the 25th percentile were not receiving services. More recent evidence suggets that similar patterns exist today as well.

# Notes to
# Chapter 4

1 Daniel Koretz Poverty Among Children. Congressional Budget Office, 1984.

2 C. Davis and C. Haumb, and J. Willette. "U.S. Hispanics: Changing Face of America." Population Bulletin 38(3). Washington, DC: Population Reference Bureau, Inc., 1983. See also Paul E. Peterson, "Economic and Political Trends Affecting Education." Paper presented to the Association of Colleges and Schools of Education in State Universities and Land Grant Colleges and Affiliated Private Universities, Denver, CO., 1985.

3 Racial/ethnic data for the school-age population were obtained by Child Trends, Inc. from two items on the 1983 Current Population Survey, U.S. Bureau of Census -- one on race, the other on origin or descent for children aged 6 to 17. The White category from this analysis refers to non-Hispanic Whites; similarly, the Black category refers to those whose race is Black but whose origin or descent is not Hispanic. The Hispanic category includes those whose origin or descent is Mexican American, Chicano, Mexican, Puerto Rican, Cuban, Central or South American, or Other Spanish, regardless of race. The Other category refers to non-Hispanics or a race other than White or Black. Both the White and Black categories in these tabulations using census data refer to a more restricted population than corresponding categories in publications and tabulations sponsored by the U.S. Bureau of the Census, since the Bureau's categories include Hispanics who identify themselves as White or Black, respectively.

Racial/ethnic data for the Chapter 1 program (1982-83 school year) were obtained from U.S. Department of Education/Office of Planning, Budget and Evaluation, Annual Evaluation Report, Fiscal Year 1984. Washington, DC: U.S. Government Printing Office, 1985, p. 101-03. Data were based on figures provided by 36 States reporting this information through the Chapter 1 Information and Reporting System for school year 1982-83. Similar to Child Trend's reanalysis of 1983 census data for deriving school population estimates, the White category from this source refers to non-Hispanic White, and the Black category to non-Hispanic Blacks. The Other category includes Asian or Pacific Islanders, American Indians or Alaskan natives. The Chapter 1 reporting system is the only source of national data on the minority status of program participants. Estimates from this source are not stable from year to year, largely as a result of different States reporting or not reporting each year and changes in some States' procedures for collecting and reporting such information.

Racial/ethnic data for the Title I program (1976-77 school year) are from published survey results of compensatory education students. National Institute of Education, Evaluating Compensatory Education: An Interim Report on the NIE Compensatory Education Study. Washington, DC: Author, 1976, p. III-26. Categories employed in this survey were White, Black, Spanish surnamed, American Indian, and Asian and Pacific Islanders.

4 Michael A. Carpenter and Patricia A. Hopper, Synthesis of Chapter 1 Data: Summary Report. Draft. Reston, VA: Advanced Technology, 1985, p. 5.

5 U.S. Department of Education/Office of Planning, Budget and Evaluation, Annual Evaluation Report Fiscal Year 1984. Washington, DC: Government Printing Office, 1985, p. 201-1.

6 National Center for Education Statistics, "Private Elementary and Secondary Education, 1983 Enrollment, Teachers, and Schools," NCES Bulletin. Washington, DC: U.S. Department of Education, 1984, pp. 2 and 5.

7 James S. Catterall "Private School Participation and Public Policy." Stanford, CA: Institute for Research on Educational Finance and Governance, 1985. Bruce Cooper, Donald H. McLaughlin, and Bruno V. Manno, "The Latest Word on Private School Growth," Teacher College Record 85(1), Fall 1983: 80-90.

8 Private school enrollment figures are from: National Center for Education Statistics. "Private Elementary and Secondary Education..." Figures on Chapter 1 participants enrolled in private schools are from: National Center for Education Statistics. Unpublished draft tables from NCES Private School Survey, August 9, 1985. (See Appendix F, Part 1, Table 3)

9 Advanced Technology, Local Operation of Title I ESEA, 1976-1982: A Resource Book. McLean, VA: Author, 1983. pp 5-6 and 5-17.

10 34 (FR 200.3(b)(2)).

11 Robert Hoepfner, (Editor). Substudies on Allocation and Targeting of Funds and Services, Assessment of Student Growth, and Effects of Attrition. Report 13 from the Sustaining Effects Study. Santa Monica, CA: System Development Corporation, May 1981, Chapter 8.

12 Wayne Riddle "Federal Aid for the Education of Disadvantaged Children: Data on the Number of Children Eligible for and Participating in the Program." Issue Brief 85-1110 EPW, Washington, DC: Congressional Research Service, December 1985.

13 Riddle, op. cit.

14 National Coalition of Advocates for Students, Barriers to Excellence: Our Children at Risk. Boston, MA: Author, January 1985, p. 8.

15 Children's Defense Fund, An Interim Report on the Implementation of Chapter 1. Washington, DC: Author, 1984. National Advisory Council on the Education of Disadvantaged Children, Title I, Today: A Factbook. Washington, DC: Author, 1981, pp. 24-25. Personal interview with Susan Frost, Committee for Education Funding. September 1985, "Testimony for Departments of Labor, Health and Human Services, and Education and Related Agencies for 1985," March 26, 1984, p. 21.

16 U.S. Department of Education, "Statement by the Assistant Secretary for Elementary and Secondary Education on Compensatory Education for the Disadvantaged." Testimony for Departments of Labor, Health and Human Services, and Education appropriations for 1986. April 24, 1986, written insert, at p. 37.

17 National Institute of Education, Compensatory Education Services. U.S. Government Printing Office, 1978.

18 Advanced Technology, Local Operation, p. 3-14.

19 These estimates are based on data collected by the National Assessment of Educational Progress during school year 1984-85.

20 For instance, The Sustaining Effects Study, cited extensively here, was stimulated by the 1974 amendments to Title I, which required a survey of the number of educationally disadvantaged students who were and were not served by Title I. [Sec. 417(a)(2), P.L. 93-380]

21 Carpenter and Hopper, Synthesis of Chapter 1 Data: Summary Report. Advanced Technology, Inc., September 1985, p. 4.

22 Michael J. Gaffney and Daniel M. Schember, Current Title I School and Student Selection Procedures and Implications for Implementing Chapter 1, ECIA. McLean, VA: Advanced Technology Inc., September 1982. The six options or exceptions include: (1) "no wide variance" -- selecting all areas or schools because their poverty levels do not vary significantly across a district; (2) "25 percent rule" -- selecting an area or school with a poverty level below the district average but above the 25 percent minimum; (3) "attendance vs residence option" -- selecting schools on the basis of poverty levels of children attending public schools rather than poverty levels of children residing in eligible areas; (4) "grandfathering" -- selecting an area or school that was eligible one or two previous years even though it is not currently eligible; (5) "similar size and scope skipping option" -- skipping eligible schools if they receive similar compensatory education services from non-federal sources; (6) "achievement vs poverty option" -- selecting areas with higher numbers or percentages of educationally deprived children over areas with higher concentrations of poverty.

23 Richard Apling The Influence of Title I Budget Cuts on Local Allocation Decisions: Some Patterns from Past and Current Practice. Reston, VA: Advanced Technology, Inc., 1982.

24 Martin E. Orland and Richard Apling, "The Impact of Federal Compensatory Education Budget Changes on the Intensity of Services Provided." Paper prepared for the annual meeting of the American Educational Research Association, San Francisco, April 1986, and other unpublished tables.

25 Carpenter and Hopper, op. cit., Appendix D.

26 Carpenter and Hopper, op. cit., Appendix D.

# Chapter 5
# Summary and Conclusions

Federal compensatory education assistance began in earnest in 1965 with the passage of one of the Great Society programs, Title I of the Elementary and Secondary Education Act of 1965. That legislation authorized funding for local school districts to support compensatory education programs for disadvantaged students. Since 1965, that legislation has been reauthorized on several occasions, revised and refined, and even superseded in 1981 by new legislation, Chapter 1 of the Education Consolidation and Improvement Act. In 1983, this National Assessment of Chapter 1 was mandated by Congress in preparation for yet another reauthorization of the legislation, scheduled to occur in 1987. The final report from this National Assessment will describe a number of aspects of State and local practice under Chapter 1.

The legislation for the National Assessment also specified that two interim reports be produced, but did not specify their content. As we planned the overall National Assessment, we decided to use these interim reports to provide broader perspectives on Chapter 1, and restrict the final report to the specific details of Chapter 1 as it is currently implemented. With regard to the first interim report, we considered three separate, though related, goals. First, in recognition of the twentieth anniversary of the legislation, it seemed appropriate to acknowledge the population of students whose existence gave rise to the program: educationally-deprived students. Second, since a number of studies had focused on poor children recently, either identifying the causes for childhood poverty or gauging the impact their numbers could have on Federal aid programs, it seemed appropriate to examine those trends as they bear on education programs such as Chapter 1. Finally, because we had received many questions from both Congressional staff and Department of Education officials about who was actually being served by the program, the interim report seemed to be an appropriate place to present analyses of *program beneficiaries*. There were two versions to this question. One was: Why did the Sustaining Effects Study find then-Title I programs to be serving so many children who were not poor or low-achieving? The other was: How many eligible children are left unserved?

These three goals for this report are all related to a concept that is central to the law: that of the educationally-deprived child. Ideally, an examination of educationally-deprived children would consider a number of definitions of educational deprivation, ascertain how many children fit each definition, and then determine how many of them were provided with compensatory education. But the data do not permit a satisfying rendition of that ideal. Dry statistics about family income, education levels, races or family sizes, do not convey the web of social and psychological circumstances that surround an educationally-disadvantaged child. Yet these are the data with which we must contend.

Nevertheless, the analyses presented here have permitted a number of new insights into the phenomenon of educational deprivation. The three sets of analyses we conducted parallel the three main goals for the report.

## Overview of the Findings

In *chapter 2* we examined a number of aspects of the relationship between poverty and achievement. We used two definitions of poverty: the length of time the student's family has been poor and the proportion of poor children attending a student's school. Research has shown that the families' official poverty status is only weakly related to student achievement. We found that other measures of poverty, which take into account the intensity of the poverty experience for the child, are more strongly related to educational outcomes. These measures include the length of time the child spends in poverty and the concentration of poor children attending the child's school. We found that students were increasingly likely to fall behind grade levels as their families experienced longer spells of poverty, and that achievement scores of all students -- not just poor students -- declined as the proportion of poor students in a school increases.

These findings are reasonably consistent with the Chapter 1 provisions. Measures of poverty concentration appear to be good predictors of average student achievement, and Chapter 1 requires districts to use such measures when they select schools to participate in the program. We also know that individual family poverty status, which does not take into account the length of time a family has been poor, is a relatively weak predictor of individual student achievement. Chapter 1 provisions accommodate this fact by requiring districts to use measures of achievement, rather than poverty, when selecting individual students to participate in the program.

Chapter 1 legislation, however, relies on official census counts of poverty to allocate funds among counties. In chapter 3, we described the characteristics of children whose families met the official census definition of poverty as well as those who experienced long spells of poverty and those who lived in areas with high concentrations of poverty. We also examined students who were not achieving well in school. These analyses relied on separate data bases, so that it is difficult to tell the extent to which the same students were being identified by all the analyses. There is evidence that about 75 percent of non-elderly adults counted as poor by the census are experiencing medium- to long-term spells of poverty. The remaining 25 percent counted by the census are likely to be experiencing poverty spells of three years or less. With regard to the two measures of intensity of poverty experiences, children who experienced long-term family poverty and children who lived in areas with high concentrations of poverty were both more likely to belong to minority groups, more likely to live in the Southeast, and more likely to live in small rural areas. Those residing in areas with high concentrations of poverty were also more likely to reside in large urban areas, a characteristic not reported by researchers investigating long-term family poverty. We also found that children who lacked reading proficiency were more likely to be minorities, to live in rural areas or in large urban areas, and to have less-educated parents.

The preponderance of Black children, and minority children in general, among those experiencing long-term family poverty and concentrations of poverty in their communities suggests that minorities may be experiencing a qualitatively different form of poverty than other poor children experience. Their families are likely to be poor for longer periods of time, and their communities are more likely to contain a preponderance of poor people. To the extent that students experiencing these intense forms of poverty live in different communities from other poor students, the census counts of poverty may under-estimate the incidence of low achievement in these communities.

In chapter 4, we examined the characteristics of those students who actually have been served by Title I or Chapter 1 programs. Relative to the population of school-age children, Title I/Chapter 1 students were more likely to be poor, to belong to minority groups, to be enrolled in elementary grades, and to attend public rather than private schools. With regard to their achievement levels, our analyses suggested that the provisions regarding the selection of schools and students do not always assure that the most educationally-deprived students will be served. Nearly 20 percent of students receiving math instruction in 1976 achieved above the 50th percentile on a math achievement test, and over 10 percent of those receiving reading achieved above that level on a reading test. Yet some 60 percent of students scoring below the 25th percentile were not receiving services.

The proportion of such less-low-achieving students being provided with compensatory education services depended in part on the population of low-achieving students available to be served by the school, and in part on the local decision to serve many versus a few children. Schools with fewer lower-achieving students were more likely to serve relatively higher-achieving students, and schools with relatively large programs were more likely to serve higher-achieving students, unless they have very high concentrations of poor students.

Though the data on which these analyses were based were old, more recent data sources indicated that similar patterns of achievement levels exist among Chapter 1 students today, and will probably continue to exist in the future unless Congress decides to restrict program participation in some way.

## Conclusion

If Congress were not satisfied with the nature of students who participate in Chapter 1 programs, it could probably alter local school and student selection practices by altering one or more of the provisions of Chapter 1. Such alterations could focus the program more tightly either on achievement or on poverty, or on both.

To focus the program more tightly on low-achieving students, Congress could define eligibility at a lower achievement percentile than has now become convention, perhaps moving from the 50th percentile to the 35th. Such an alteration would remove from the program most students who score above the 35th percentile rank, and would leave districts the option of either spending more money on those students who score below that mark or increasing the number of students below that mark who are served. Alternatively, Congress could require that services be provided to the most educationally-deprived students in the entire school, regardless of grade level, rather than permitting districts to focus on low-achieving and moderately low-achieving students within a few grade levels. This strategy may have the same effect as the first, in that services would need to be redistributed from moderate achievers in some grade levels to lower achievers in other grade levels. Finally, Congress could reduce the number of moderate achievers in the program by delimiting the kinds of *schools* that can participate. Since those schools with the lowest proportion of poor students are also more likely to serve higher-achieving students, Congress could limit participation to schools with, say, at least 10 percent poor students.

There are also several ways to focus the program more closely to poverty, and to do so in a way that would reflect more completely the apparent relationships between poverty and achievement. There already exists in the Chapter 1 legislation, for instance, provisions for providing special "concentration grants" to those districts that have unusually high concentrations of poor students. Funds appropriated to these districts are especially likely to provide services to students who are both poor and low achieving. Congress could also increase the number of poor students a district must have in order to receive a Chapter 1 grant, a practice that would probably also affect the characteristics of participating schools, or it could modify the school selection procedures so that a smaller proportion of schools participated. In fact, Congress could even modify the student selection procedures to further emphasize poverty. While the evidence suggests that official family poverty status is not a good predictor of student achievement, long-term family poverty is, and researchers at the University of Michigan have developed a method for predicting which five-year-olds (kindergarten students) are likely to live in poverty when they are between the ages of six and ten.[1] Use of a student selection procedure such as that developed by these researchers would focus student selection on poverty, but could also result in more low-achieving students being served as well.

The evidence presented here suggests that any of these options is likely to move services from relatively higher-achieving students to lower-achieving students. But without more knowledge of how districts select schools and students to participate, or how they allocate resources to schools and design programs to meet the needs of their students, it is difficult to gauge how successful any of these options might be, or whether they might introduce unnecessary burdens on districts. The National Assessment of Chapter 1 has initiated studies of all of these aspects of local programs, and will report its findings to Congress in January 1987. These findings may help Congress determine the future of this important program.

# Notes to
Chapter 5

[1] Greg J. Duncan, S. N. Morgan, and W. Rogers, "A Simple Method for Using Current Information to Identify Children Who Are Likely to Experience Persistent Poverty Spells in the Future." University of Michigan Institute for Social Research, unpublished and undated manuscript.

[2] There is evidence that school districts restrict the number of grade levels served when their budgets shrink, and that they remove altogether their secondary-level programs. See Richard Apling, *The Influence of Title I Budget Cuts on Local Allocation Decisions: Some Patterns from Past and Current Practice*, Reston, VA: Advanced Technology, Inc., 1982.

# APPENDIX A

## Statute for the National Assessment of Chapter 1

# NATIONAL ASSESSMENT OF COMPENSATORY EDUCATION ASSISTED UNDER THIS CHAPTER

"Sec. 559 (a) The Secretary shall conduct a national assessment of compensatory education assisted under this chapter, through independent studies and analysis by the National Institute of Education. The assessment shall include descriptions and assessments of the impact of (1) services delivered, (2) recipients of services, (3) background and training of teachers and staff, (4) allocation of funds (to school sites), (5) coordination with other programs, (6) effectiveness of programs on students basic and higher order academic skills, school attendance, and future education, and (7) a national profile of the way in which local educational agencies implement activities described under section 556(b). The National Institute of Education shall consult with the Committee on Labor and Human Resources of the Senate and the Committee on Education and Labor of the House of Representatives in the design and implementation of the assessment required by this section. The National Institute of Education shall report to Congress the preliminary results of the assessment required by this section in January and July of 1986, and a final report shall be prepared and submitted to the Congress not later than January 1, 1987.

"(b) Notwithstanding any other provision of law or regulation, such reports shall not be subject to any review outside of the Department of Education before their transmittal to the Congress, but the President and the Secretary may make such additional recommendations to the Congress with respect to the assessment as they deem appropriate.

# APPENDIX B

## List of Contracted Studies

# Summary of Studies
# National Assessment of the ECIA Chapter 1 Program

## SELECTION OF SCHOOLS AND STUDENTS

### A Study of Targeting Practices Used in the Chapter 1 Program

Contractor : SRA Technologies, Inc., Mountain View, California
Subcontractor : Northwest Regional Educational Laboratory, Portland, OR
Project Officer: Dick Jung

Investigators will examine the net effects of Chapter 1 school and student selection procedures on the characteristics of the students served in the program. The study will analyze data on student poverty level, achievement status, grade point average, attendance rates, grade retention patterns, and participation in other categorical programs for Chapter 1 and non-Chapter 1 students in 30 districts. The five major questions addressed are:

- How do districts determine which schools and students receive program services?
- What rationale(s) underlie district policies and practices for selecting project schools and participants?
- How do Chapter 1 schools and students differ from non-Chapter 1 schools and students?
- Are different types of students served under Chapter 1 than were served under Title I?
- What are the effects of varying school and student selection practices on the characteristics of students served in the program?

Thirty districts will be selected so that they are diverse with respect to size, urbanicity, region, poverty level, concentration of limited-English-proficient students, and the presence or absence of non-federal compensatory education programs.

## SERVICES

### A Survey of Chapter 1 Schools and Teachers

Contractor : Westat, Inc., Rockville, Maryland
Subcontractor : RMC Research Corp., Hampton, New Hampshire
Project Officer: Gil Garcia

These researchers will survey by telephone staff members in roughly 1300 schools across the country. Chapter 1 coordinators will be asked about the characteristics of their schools and about their Chapter 1 program configurations and Chapter 1 teachers will be asked about their education and experience and about the services they actually provide to students. For comparison purposes, regular classroom teachers, resource teachers and teachers of other categorical programs will also be sampled and asked analogous questions.

The survey will include:

- Elementary Schools with Chapter 1 Programs
    - Some with high concentrations of poverty
    - Some with high concentrations of limited-English Proficient Students
- Elementary Schools Without Chapter 1 Programs
    - Some with other kinds of compensatory education
    - Some with no compensatory education students but with disadvantaged students.
    - Some with no compensatory education and with very few disadvantaged students.
- Private Elementary Schools with Chapter 1 Programs
- Middle Schools and Secondary Schools
    - Some with Chapter 1 Programs
    - Some with other compensatory education programs

### A Study of the Whole-Day Instructional Experiences of Chapter 1 Students

Contractor : Far West Educational Laboratory, San Francisco, CA
Project Officer: Randy Demaline

Investigators will describe the actual configuration of services that Chapter 1 students receive over the course of a school day and over the course of a school week. They will determine:

- Students' exposure to various instructional topics.
- How services are coordinated across service providers.

- The quality of instruction provided.

- The services provided in the regular classrooms while Chapter 1 students are pulled out.

- What teachers and students perceive the role and purpose of Chapter 1 to be.

The study will include thirty schools distributed over six geographic regions. The schools will encompass elementary, middle, and secondary levels, and some will be private schools. Within each school 8 students will be followed for a day and 2 will be followed for a week. The students will vary in grade level and achievement levels, and in the configuration of services provided to them.

### A Study of the Costs of Special Education Services, Amended to Include Costs of Chapter 1 Services

Contractor: Decision Resources, Washington, DC

This study, funded initially by the Education Department's Office of Special Education, is designed to determine the resources (and their costs) used to provide special education services under a variety of specific program arrangements. NIE has amended the contract so that the investigators will be able to document the resources used to provide services under a variety of Chapter 1 program arrangements as well. The Chapter 1 program options include elementary in-class programs, elementary pull-out programs, secondary programs, after school programs and so forth.

The study will be conducted in a nationally representative sample of 60 school districts.

## PROGRAM DESIGN AND THE ALLOCATION OF RESOURCES

### A Study of How Districts Allocate Resources Among Schools

Contractor : Educational Testing Service, Princeton, New Jersey
Subcontractors : Gaffney, Anspach, Schember, Klimaski and Marks, P.C., Washington, DC
: Decision Resources, Inc., Washington, DC
Project Officer: Marty Orland

Investigators will examine both the decision-making processes used to allocate resources among schools and the resource distributions -- the number of teachers, aides, or computers per child or per grade level that result from those decision.

Investigators will:

- Describe the influence of state and Federal laws on local decisions.
- Determine whether different decision-making strategies yield different patterns of resource allocation.
- Show the impact of different resource allocation strategies on economically- and educationally-disadvantaged schools and students.
- Determine the impact of multiple-needs students, and of multiple Federal and state programs on Chapter 1 resource allocation patterns.
- Describe changes in resource allocation from Title I to Chapter 1.

Twenty districts in 8 states will be visited. Investigators will interview both district and school staff regarding their decision making, and will document actual resources that results from those decisions.

### A Study of School District Program Design Decision-Making

Contractor : SRI International, Menlo Park, California
Subcontractor : Policy Studies Associates, Washington, DC
Project Officer: Ron Anson

Investigators will determine how districts and schools make program design decisions and will compare districts and schools that have changed their approaches to those that have remained constant. The study has two goals:

- To gain a better understanding of why districts and schools change or maintain key features of their Chapter 1 programs. The study will examine the influences of:

  - Legislative change from Title I to Chapter 1
  - Shifts in state or local policies
  - Changes in budget contexts
  - Program design preferences of state or district administrators and teachers
  - Apprehension about federal audits
  - Institutionalization of the Chapter 1 program
  - Conviction that the program is successful and working well

- To examine decisions to adopt or forego particular program design features of current public interest. Examples of such features are:

  - Programs in secondary schools
  - In-class program designs
  - Reliance on aides vs. teachers
  - School-wide projects
  - Changes in the intensity or grade levels of services
  - Parent involvement
  - The use of computers
  - Emphasis on higher order skills

The study will be conducted in 20 school districts and 60 schools.

## CHANGES IN PRACTICE FROM TITLE I TO CHAPTER 1

### A Study of Local Implementation of ECIA Chapter 1

Contractor :
Project Officer: Ron Anson

This survey of 2000 school districts will include questions about all the major provisions in the legislation:

- parent involvement
- program evaluation
- needs assessment
- selection of schools and students
- services to private school students
- program design and resource allocation
- administration and record-keeping

The survey sample is designed to partially overlap with the sample of school districts which participated in the 1980-81 District Practices Survey, thus permitting cross-time comparison in these districts.

In addition to the mailed questionnaire to 2000 school districts, the survey will include in-depth telephone interviews with 200 of the districts which respond to the mailed questionnaire.

## ADMINISTRATION

### A Study of Administration

Contractor : Abt Associates, Inc., Cambridge, MA
Subcontractors : Education Commission of the States, Denver, CO
Policy Studies Associates; Washington, DC
COSMOS, Washington, DC
Project Officer: Marty Orland

Investigators will document administrative practices in both state and local education agencies during the 1985-86 school year and any major changes that have occurred since Title I. Topics to be covered include:

- At the state level:
    - Monitoring and enforcement
    - Technical assistance
    - Application approval
    - Policies in areas where the Federal law has changed, such as parent involvement, comparability, and evaluation

- At the local level:
    - Needs assessment and evaluation
    - Program design decision-making
    - Funds allocation policies and practices
    - Parent involvement
    - Application and reporting activities

The study will entail visits to 20 states, with return visits to nine of them. Then, in each of the nine states, three school districts will be visited.

An NCES Fast Response Survey (FRS) of Chapter 1 Oversight

National Center for Educational Statistics
Project Officer: Marty Orland

This survey of 700 school districts will contain questions about local experiences with state program monitoring, state audits, Federal management reviews and federal audits. Questions are asked regarding the number of experiences districts have had with each type of oversight, the content covered by the oversight review and the nature of changes in practices, if any, that resulted.

# EFFECTIVENESS

## Analysis of School District and State Education Agency Records

Contractors : Pending. (We anticipate multiple awards).
Project Officer: Gil Garcia

State and local agencies will analyze their data bases on Chapter 1 students to answer questions regarding the coordination of Chapter 1 with other programs and regarding the effectiveness of Chapter 1 services. Two categories of studies will be funded:

a) Investigations of the patterns of categorical services Chapter 1 students receive over several years; and

b) investigations of the long-term educational accomplishments of compensatory education program students.

Between 15 and 25 awards are anticipated, with each state or local agency conducting analyses that are appropriate to the particular data bases it has available.

## Effects of Alternative Designs in Compensatory Education

Contractor : Research and Evaluation Associates
Project Officer: Randy Demaline

A number of independent scholars will be asked to review research on the effectiveness of various program design features used in compensatory education. Features likely to be examined include the following:

- Staffing patterns
- Service configuration
- Relationship between Chapter 1 and the regular program
- Curriculum
- Overall compensatory education strategies

Once these research summaries are completed, other researchers will be asked to critique them. All summaries and critiques will then be reviewed by a panel of educators, and their findings will be bound together in a summary document.

# TECHNICAL SUPPORT

## Data Analysis and Technical Support

Contractor : Decision Resources, Washington, DC
Subcontractor : Policy Studies Associates, Washington, DC
Project Officer: Bea Birman

This contract serves a number of purposes for NIE's Chapter 1 study. The contractor is responsible for:

- Creating a data library
- Conducting computer analyses of large data bases (e.g., Census, Sustaining Effects Study)
- Conducting literature reviews and issue analyses
- Coordinating data collection and analyses across all of the other procured studies

These activities will provide information that NIE will use in writing its three Congressionally mandated reports. This contract has already produced Chapter 1 state profiles and an overview of state compensatory education programs for the National Assessment of Chapter 1.

# APPENDIX C

## Administrative Status of the National Assessment

# Administrative Status Report

The National Assessment of Chapter 1 was legislated as part of the Technical Amendments to the Education Consolidation and Improvement Act of 1981. Enacted in December 1983, these amendments required the National Institute of Education (NIE) to provide Congress with a final report by January 1987, just three years later. The major milestones for this National Assessment, either accomplished or projected, are listed in Table 1. The remainder of this administrative status report reviews each aspect of the administration of the National Assessment of Chapter 1.

## Milestones

Following passage of the legislation, NIE hired a Study Director to design the National Assessment of Chapter 1 and to oversee its implementation. The Study Director joined NIE in April 1984.

During the summer of 1984, the Study Director discussed the study's purposes and Congress' information needs with several Congressional staff members; with Department of Education staff, both within the Chapter 1 program administration and in the Department's Office of Planning, Budgeting and Evaluation; with members of the Office of Management and Budget, the Congressional Research Service, the Congressional Budget Office, and the General Accounting Office; with many educational associations and interest groups within the Washington area which were known to have an interest in the Chapter 1 program and its future; and with a variety of educational researchers and program evaluators.

On the basis of these discussions, NIE developed a plan for the National Assessment of Chapter 1. The plan was reviewed by Department of Education officials in late summer and in October it was presented to Congressional staff. Two briefings were held, one for Senate staff and one for House staff. Following these briefings, further changes were made in the plan.

In November 1984, the final plan was submitted to Congress and NIE began in earnest to implement it.

## Table 1

## Milestones for the National Assessment of the Chapter 1 Program

| | |
|---|---|
| December 1983 | Congress passes legislation requiring the National Institute of Education to conduct a National Assessment of the Chapter 1 program. |
| April 1984 | National Institute of Education hires a Director to oversee the National Assessment. |
| October 1984 | National Institute of Education presents a Study Plan to the Congress. |
| December 1984 | National Institute of Education completes hiring a Study Team to implement the Study Plan. |
| May - September 1985 | National Institute of Education procures a series of independent studies for the National Assessment. |
| October 1985 | National Institute of Education is replaced by the Office of Research within the Office of Educational Research and Improvement. |
| January 1986 | Office of Research produces its first Interim Report, as required by the Congress, for the National Assessment of Chapter 1. |
| July 1986 | The Office of Research is scheduled to produce its Second Interim Report for the National Assessment of Chapter 1. |
| January 1987 | The Office of Research is schedule to produce its Final Report for the National Assessment of the Chapter 1 program. |

Concurrently, NIE began forming a Study Team to implement the plan. Qualified researchers both within the Department and outside it were solicited. A few Department staff began in the summer of 1984, but researchers from outside the Department did not join the Study Team until December.

The Study Plan outlined a number of separate investigative components which, taken together, would provide information regarding the full range of questions and issues that had been raised during the preceding summer. The first stages of implementation of the Study Plan consisted primarily of contracting assistance in carrying out a number of these components. NIE chose to contract out portions of the work in part because the level of effort involved in doing these projects did not make in-house work feasible, and in part because contracted studies assure a level of independence often necessary to given the overall study credibility.

Requests for proposals for these studies were prepared throughout early 1985, advertised through the spring of the year, and contracts for the projects were awarded throughout the summer. The full list of procured studies appears in Appendix B.

In October 1986, a year after NIE presented its Study Plan to Congress, the Secretary of Education re-organized the Office of Educational Research and Improvement (OERI) in such a way as to integrate NIE's components into the rest of the office. Under the reorganization, the Chapter 1 Study Team was located in the Office of Research (OR), one of the five components within the Office for Educational Research and Improvement. The Office of Research contains the research functions that had been previously placed in NIE, and consequently is the closest approximation to NIE that now exists.

This report constitutes the first of three reports which will be delivered to Congress as part of this National Assessment of Chapter 1.

Two other reports, one scheduled for July 1986 and one scheduled for January 1987 are now being planned. The July report will summarize evidence of program effectiveness and effective practices for educating disadvantaged children. The Final Report, to be delivered in January 1987, will describe findings from all contracted studies, summarizing virtually every aspect of the current operation of Chapter 1 programs.

## Budget

The budget for the National Assessment has proved to be one of its most complicated and problematic features. This has occurred for three reasons. First, the study was expected to be funded from three sources, rather than one, thus requiring three separate budget lines rather than one. Second, one of those sources, the Chapter 1 budget, is forward funded. This means that its budget does not normally become available until three-quarters of the way through the fiscal year. For fiscal year 1985, Chapter 1 funds could not contribute to the study until well into the fiscal year. For fiscal year 1986, the Department asked Congress to make a special provision in the Chapter 1 budget which would enable Chapter 1 funds being used for this National Assessment to become available earlier. The special legislation resulting from that request greatly facilitated the progress of the National Assessment. Finally, the third source of funds, the Secretary's Discretionary fund, was impounded by the Federal District Court in Chicago, and therefore was not available at the time or in the amount that the Chapter 1 study had anticipated. As a result of these budgetary difficulties, the Study Team solicited funds from programs within the Department of Education other than those specified by the Congress. NIE signed agreements with both the Office of Bilingual Education and the Office of Special Education such that these offices agreed to support studies of topics of mutual interest. However, also as a result of these budgetary difficulties, many of the procurements were postponed because funds were not available when they were originally anticipated. Finally, virtually every project had to be incrementally funded so that those funds that were available at first could be used to start as many projects as possible.

Table 2 summarizes the contributions made by each funding source to date.

Table 2

Contributions to the National Assessment of Chapter 1
(in thousands)

| Funding Source | FY'83 | FY'84 | FY'85 | FY'86 | TOTAL |
|---|---|---|---|---|---|
| Chapter 1 | $376 | $400 | $1500 | $1100 | $3376 |
| NIE |  | 300 | 450 | 1481 | 2231 |
| Chapter 2 (Secretary's Fund) |  |  | 800 | 450 | 1250 |
| Bilingual Education |  |  | 350 | 75 | 425 |
| Special Education |  |  | 200 |  | 200 |
| TOTAL | $376 | $700 | $3300 | $3106 | $7482 |

### Current Status

The current status of the National Assessment of Chapter 1 is as follows:

- All planned procurements have been initiated, but many have not yet received all their funds, and several are behind schedule.

- Most funded projects are on schedule, and are collecting data from school districts during the 1986-86 school year.

- Preparations are underway for the Second Interim Report, due in July 1986.

- Preparations are also underway for the Final Report, due in January 1987.

Despite difficulties in getting contracts awarded and getting contracted studies underway, OERI still plans to complete the National Assessment by January 1987, as required by Congress. However, the timeline is such that many interesting analyses will not be completed by that time. We therefore, plan to present a series of separate special-topic reports in early 1987 to enhance the findings presented in the main report.

# APPENDIX D

## Support for Chapter 2

Part 1 : The Effects of Short-Term and Long-Term Poverty on Educational Attainment of Children

Prepared By: Stephen Chaikind
Decision Resources Corporation
1985

*****

Part 2 : The Relationship Between School Poverty Concentration and Students' Reading and Math Achievement and Learning

Prepared By: David E. Myers
Decision Resources Corporation
December 1985

# The Effects of Short-Term and Long-Term Poverty on Educational Attainment of Children

Stephen Chaikind
Decisions Resources Corporation

December 1985

## A. Introduction and Summary

The goal of this task is to examine how short-term, long-term and intermittent spells in poverty affect children's educational attainment. The measure of educational output or attainment used in this study is whether a student is at or behind the modal grade level expected for each given age. Results show that for the sample population of high school students, past family poverty spells lasting more than two or three years are associated with significantly lower levels of educational attainment than for those experiencing short, intermittent periods in poverty or no poverty at all.

The analysis was performed using data from the Panel Survey of Income Dynamics (PSID) longitudinal surveys. These data are limited for educational analyses of children, as will be discussed below. We caution the user to note these data limitations. The analysis is based on a sample of 16, 17 and 18 year old children who were in high school at some point during the 1978 to 1983 period, and for whom there were no missing data. We suspect that many of those who had dropped out of school prior to age 16 or who were not traceable by the interviewers comprise many of the missing cases. In addition, many children were not in the original sample families, but were included in more recent surveys as the result of their parent's remarriage into a sampled family. We could not trace their history in poverty, and thus, we did not include these students in our analysis.

Nonetheless, the percentage of students performing below their expected grade level does increase as the number of years they spent in poverty increases. Other data, in addition, suggest that the impacts of years in poverty on educational attainment similar to the trends for the entire population also hold for both white and black cohorts individually, although the trends for blacks are not shown to be statistically significant in this sample.

Small sample sizes, however, limit the usefulness of the data for more detailed cross-tabular analysis of educational attainment by other family characteristics, such as mother's education, the incidence of divorce, or the head of the household's unemployment. We attempted to alleviate this data limitation by subjecting the data to a series of regression analyses using ordinary least squares methods. Results from these regressions show results similar to the cross-tabular analyses; that is, years in poverty is related to educational attainment for all students and for whites, but not statistically related for blacks. It should be noted that this result for blacks is not a function of the sample size, which is larger for blacks than for whites. In addition, social and family factors, such as parent's education, whether a mother attended PTA meetings, the age of the mother when her children were born and whether the mother was divorced or separated are all seen to be related to children's educational attainment.

## B. Organization of the Task

Our objective was to use the Panel Survey of Income Dynamics (PSID) longitudinal data set to study the extent to which educational attainment might be affected by the length of time spent in childhood poverty. Other ideas were to see how movements into and out of poverty affected a child's grade attainment, how changes in life events that led to the spells of poverty might have differentially affected their performance in school, and how variations in the age that the child's poverty began might have affected educational attainment.

There are advantages and disadvantages to using the PSID for an analysis of this type. The PSID data follows families through a 16 year period, from 1968 to 1983. The sample contains information on over 6,000 families through the period, and includes a measure of family poverty for each of the 16 years. This poverty measure, as discussed below, is similar to the Orshansky poverty index, although not identical to it. Consistent information over this relatively long time span makes the PSID data set potentially well suited for the study of long-term and intermittent spells of poverty.

In addition, the PSID data set, by following the same families over a long period of time, allows a detailed look at how changes in life's circumstances leading to poverty are translated into lower or higher levels of educational attainment. We initially wanted to study, for example, issues such as the impact of a two year spell of unemployment for a family head on the family's probable resultant period in poverty and then on their children's grade attained.

There are, however, a number of obstacles posed by the data that hampered the scope of our anticipated analysis. The fundamental problem is that the PSID data set was created primarily to follow labor market behavior over time. Education analysis was not a concern, other than to the degree that education influences lifetime earnings or occupational choice. The education variables in the data set were primarily focused on the individual's final level of education achieved. This concern with ultimate education attainment is consistent with analysis of the impacts of education on earnings; it does not, however, facilitate study of the impacts of poverty on education.

The specific problems with the education related data are twofold. First, the ultimate level of educational attainment was obtained for all adults in the survey only twice, in 1968 and 1976. The individual's highest grade attained was not updated unless the individual later formed a new, separate household. A more relevant shortcoming of the data, which seriously hindered the study of children's educational attainment, is the survey's failure to record a child's grade completed before age 16. Further, before 1979, the data only reported the last grade completed for individuals over the age of 16 when the grade was the terminal grade obtained, i.e., at the completion of school.

These data idiosyncracies effectively limited our analysis in several ways. We could only study the educational level attained by children aged 16 and over. The idea of following children through periods of poverty, and examining the impact of such poverty on their concurrent levels of schooling was not possible. Nor was an examination of the differential impacts on education levels by the causes of the poverty spells. In addition, our hope of determining at exactly what grade and age past spells in poverty were likely to impact on educational attainment was not achievable.

Because information on the year-to-year changes in one's last grade completed was only updated each year from 1979, we were effectively limited to a series of 16 to 18 year old child cohorts between the years of 1978 to 1983. While this limitation provided a sufficient number of observations for analysis across all students, it enables information of only limited utility when conducting analysis for many subgroups of the student population.

There is one potential way around these data limitations, but it is beyond the scope of this phase of the study. The PSID data carefully documents splitoff families--that is, families formed when children leave their parents' homes and form new ones of their own. When such splitoffs occur, the new heads' last grade completed were obtained. Thus, one might be able to correlate, for instance, educational attainment and poverty for all 21 to 29 year old heads dating as far back as when they were five years old. These results might allow us to determine whether poverty delayed the completion of schooling, encouraged the pursuit of Graduate Equivalent Degrees (GEDS), or otherwise influenced ultimate educational outcomes. Such a study, however, loses the focus on the educational attainment of children, as opposed to adults, which we were striving for here.

## C. Definition of Age-Grade Relationships and Poverty

One comparison supported by the data involved comparing students' performance in school, as measured by the grade they are in, to the grade attained by most similarly aged children. This modal grade completed was calculated to be grade 10 for the year children turned age 16, 11 for 17 year olds, and 12 (high school graduate) for those 18 years old. Cross-tabulations between deviations from this modal grade and students' actual grade achieved by years in poverty provide indications of poverty's impact on educational attainment.

The age-grade relationship was calculated from data on the PSID survey in the following manner. First, we determined the students' age by the end of a given survey year based on his year of birth. Then, from the "last grade completed" question, we determined the students' grade achieved in that year. In cases when the survey interview took place in months before the end of the school year (May or June), we used the grade completed from the following year's interview when that interview also occurred before the end of the school year (which it frequently did). By cross checking the interview month in each year, we thus further ensured that the grade completed associated with each student was actually representative of the student's true grade level.

The poverty index used for this analysis is consistent with the official government poverty ratio, although not identical to it. The ratio of total family money income to their basic income need was obtained directly from the PSID data set. The basis for the PSID poverty needs measure is the USDA's low cost food budget determined by the student's family composition and size. We reduced this budget by 20 percent to approximate the government's Economy Food Plan and inflated it using the Consumer Price Index as obtained from the Statistical Abstract of the United States. This procedure, according to PSID documentation, results in a poverty ratio closely corresponding to the official poverty index. An index value of 1.0 or more indicated that the family was not poor.

Poverty is officially defined by the government as occurring when families fall below a poverty index value of 1.0. However, those with incomes above this cutoff level may also be called poor, especially in high cost regions in the country. In order to observe the educational attainment for children whose families border on being poor for much of their lives, but do not actually fall below the official poverty measure, we also alternatively defined as poor those whose poverty index falls below a value of 1.5. In addition, the PSID data have been shown to find more household income than Census surveys do (Bane and Ellwood, 1983, p. 10). Using an alternative poverty cutoff index of 1.5 allows one to compensate for these differences in observed incomes.

Finally, it should be pointed out here that we use the term "educational attainment" here to mean educational performance as indicated by whether a student did or did not achieve his expected modal grade level in school. This modal grade measure of educational performance is the only usable indicator that can be derived from the PSID data.

## D. Tabular Results

Table 1 below shows the percentage of all students who had not attained the expected or modal 12th grade level in school when they were 18 years old. These results encompass all 18 year olds in each year from 1978 through 1983 for whom complete PSID data were obtainable. Table 2 compares the percentages shown in Table 1 for the 18 year old cohort with those for the 16 year old cohort. Since our sample encompassed all 16 to 18 year olds over the five year period, many of the same students were included in both the 16 and 18 year old cohorts, although there were some students in only one of the cohorts. Thus, the two samples making up Tables 1 and 2 are not independent and contrasting the results from each table should be undertaken with care. It should also be noted here that we analyzed the educational attainment of the 16 and 18 year old cohorts in this study, omitting the 17 year old cohort, because potential changes in educational attainment as a child gets older will be greatest between these ages. The 17 year old cohort, however, is available for analysis if desired.

# TABLE 1

## Percent of 18 Year Olds Below Modal Grade (12th) By Years in Poverty and Unweighted Number of Observations

| Years in Poverty | All | | White | | Black | |
|---|---|---|---|---|---|---|
| | Percent Under Mode | Unweighted Sample Size | Percent Under Mode | Unweighted Sample Size | Percent Under Mode | Unweighted Sample Size |
| Poverty Defined As Being Below The Threshold (1.0 ratio) | | | | | | |
| 0-2 | 27.2 | 806 | 26.5 | 530 | 31.9 | 243 |
| 3-7 | 48.4 | 265 | 42.8 | 47 | 48.5 | 194 |
| 8+ | 57.2 | 309 | 85.7 | 16 | 50.9 | 283 |
| Total Sample[a] | | 1,380 | | 593 | | 720 |
| 0-3 | 28.2 | 860 | 26.8 | 541 | 35.5 | 282 |
| 4-9 | 48.7 | 263 | 45.7 | 41 | 48.0 | 201 |
| 10+ | 54.7 | 257 | 88.7 | 11 | 49.1 | 237 |
| Total Sample[a] | | 1,380 | | 593 | | 720 |
| Poverty Defined As Below 150 Percent of The Threshold (1.5 ratio) | | | | | | |
| 0-2 | 24.8 | 574 | 24.6 | 434 | 30.2 | 122 |
| 3-7 | 33.8 | 247 | 28.9 | 93 | 41.9 | 134 |
| 8+ | 54.4 | 559 | 60.4 | 66 | 47.7 | 464 |
| Total Sample[a] | | 1,380 | | 593 | | 720 |
| 0-3 | 25.8 | 630 | 25.5 | 461 | 32.1 | 144 |
| 4-9 | 40.3 | 259 | 33.6 | 81 | 44.8 | 163 |
| 10+ | 51.1 | 491 | 55.2 | 51 | 47.1 | 413 |
| Total Sample[a] | | 1,380 | | 593 | | 720 |

---

[a] Total sample includes as small number of Asians and other races not shown in the White-Black comparison. Not all percetages are significantly different from each other. For all children, percentages for the first and last poverty groups are significantly different at the 95 percent confidence interval. This also holds for all 18 year old whites with 0-2 and 8+ years in poverty. For other groups, these data show no differnces.

## TABLE 2

### Comparison of Percent of 16 and 18 Year Olds Below Modal Grades (10th and 12th) By Years in Poverty [a]

| | All | | White | | Black | |
|---|---|---|---|---|---|---|
| Years in Poverty | 16 Year Olds | 18 Year Olds | 16 Year Olds | 18 Year Olds | 16 Year Olds | 18 Year Olds |
| Poverty Defined As Below The Threshold (1.0 ratio) | | | | | | |
| 0-2 | 21.4 | 27.2 | 21.7 | 26.5 | 16.5 | 31.9 |
| 3-7 | 27.7 | 48.4 | 26.0 | 42.8 | 24.7 | 48.5 |
| 8+ | 42.2 | 57.2 | 48.3 | 85.7 | 35.7 | 50.9 |
| 0-3 | 21.5 | 28.2 | 21.8 | 26.8 | 16.5 | 35.5 |
| 4-9 | 33.1 | 48.7 | 32.0 | 45.7 | 29.7 | 48.0 |
| 10+ | 39.4 | 54.7 | 39.1 | 88.7 | 34.9 | 49.1 |
| Poverty Defined As Below 150 Percent of The Threshold (1.5 ratio) | | | | | | |
| 0-2 | 20.3 | 24.8 | 20.3 | 24.6 | 18.4 | 30.2 |
| 3-7 | 22.2 | 33.8 | 23.1 | 28.9 | 17.3 | 41.9 |
| 8+ | 35.2 | 54.4 | 35.9 | 60.4 | 30.2 | 47.7 |
| 0-3 | 20.7 | 25.8 | 20.9 | 25.5 | 17.3 | 32.1 |
| 4-9 | 24.8 | 40.3 | 25.8 | 33.6 | 14.0 | 44.8 |
| 10+ | 35.0 | 51.1 | 33.0 | 55.2 | 33.8 | 47.1 |

[a] Not all percetages are significantly different from each other. For all children, percentages for the first and last poverty groups are significantly different at age 16 and 18 at the 95 percent confidence interval. This also holds for all 18 year old whites and for 16 year old whites with 0-2 and 8+ years in poverty. For other groups, these data show no differences.

The results from these tabulations show that:

- For all students, there is little difference in ultimate educational attainment as measured by grade completed for those with no or a few years in poverty. Very short term poverty is not expected to retard educational attainment. This result holds across all racial and ethnic groups, and at both the 1.0 and 1.5 poverty cutoff ratios. (Because of this relationship, we combined the results for those with 0 and 1 or 2 years in poverty. They are shown separately in Table 3, however, for information purposes.)

- Longer periods in poverty increase the probability of lagging behind one's modal grade level for all students. Depending upon how the number of years in poverty are grouped, periods in excess of 7 or more years in poverty hamper educational advancement to a larger degree than do short periods and, in some cases, intermediate periods in poverty.

- With regard to ethnic group differences, for white students there was a statistically significant increase in the percent of youth performing under the mode as one went from the lowest to the highest number of years in poverty. This result did not hold for black students, for whom no significant relationship between poverty and educational attainment could be shown within the constraint of the PSID data. Because sample sizes were small in many cases (including those for whites), however, there was little precision in the estimated percentages of poor children behind their modal grade level by ethnic group. Because the combined racial groups did provide statistically significant results, though, there is an indication that larger sample sizes may produce significant results in this direction for each ethnic group.

- When we tabulated the cohort of 16 year olds across the 1978 to 1983 period, the results were substantially similar to that for the 18 year old cohort. This result is not surprising, since many of these 16 year olds were included as part of our 18 year old cohort two years later. Table 2 below compares the percentages of our PSID cases performing below their expected grade levels at ages 16 and 18. As for the 18 year old group, the total sample of 16 year olds showed a statistically significant decline in educational attainment as one moved from the lowest to highest poverty groups. Note that the percentage of those below the modal grade level is lower in all cases for 16 year olds than for 18 year olds. Poverty affects a student's educational attainment increasingly as high school graduation approaches. The older a student becomes, the less likely are the chances of being at one's modal grade level. One can infer that a number of these older students who fall below their modal grade include a number who had dropped out, in addition to those who have lagged behind their classmates. Dropouts increase with age for a variety of reasons. For example, mandatory schooling ages vary by state; these results may indicate that those with longer

## Table 3

Example[a] of the Percent of 16 and 18 Year Olds Below Modal Grades (10th and 12th) By Years in Poverty, Including Those Never in Poverty, For Poverty Defined as Below the Threshold (1.0)

| Year in Poverty | All | | White | | Black | |
|---|---|---|---|---|---|---|
| | 16 Year Olds | 18 Year Olds | 16 Year Olds | 18 Year Olds | 16 Year Olds | 18 Year Olds |
| 0 | 21.8 | 26.4 | 22.0 | 25.4 | 16.4 | 34.4 |
| 1 - 2 | 20.0 | 30.7 | 20.5 | 31.3 | 16.6 | 27.5 |
| 3 - 7 | 27.7 | 48.4 | 26.0 | 42.8 | 24.7 | 48.5 |
| 8+ | 42.2 | 57.2 | 48.3 | 85.7 | 35.7 | 50.9 |
| Total, 1-8+ | 27.5 | 42.3 | 25.2 | 38.7 | 28.3 | 45.7 |
| Total, All | 23.9 | 32.0 | 22.9 | 28.8 | 25.2 | 42.6 |

[a] Because there was little difference in the percentage of children below their modal grade level for those with 0 and 1-2 years in poverty -- and because the sample size for those in these groups is sometimes small, the groups were combined in Tables 1 and 2. They are shown here, along with the percentages below modal grade levels for those with some poverty (1-8+ years), for illustrative purposes only. Also see note to Tables 1 and 2.

> periods in poverty tend to drop out of school in greater relative numbers than do those with fewer years in poverty. In addition, job opportunities may open up for older students, forcing poorer students to reevaluate their educational plans as their potential income from labor market participation increases.

We caution, however, against making further judgements about dropout behavior from these data. The PSID data set yielded disappointing information on the total number of high school dropouts. We were only able to obtain reliable information about dropout behavior for those whose PSID records contained little missing data during the 1978 to 1983 period. These were children who were in school at some point between the ages of 16 and 18. The implications about dropout behavior occurring between the ages of 16 and 18 drawn from Table 2, therefore, can only be interpreted as indicative of this sample, not of aggregate dropout behavior.

Our attempts to derive better dropout information proved fruitless. We tried to determine the total percentage of students who had dropped out of high school by examining sample data which asked respondents if they were in school in the previous year. Much of the PSID data for students who we would have expected to have been dropouts (i.e., those for whom no last grade was shown on the tape) were missing. We had no way of determining whether these missing cases were indeed dropouts, however. Thus, we eliminated these children from the analysis as missing data. The only dropout information we were able to obtain, then, were for those students who remained in the sample. These cases showed that 11 percent of the 18 year old cohort were not in school; however, only half of those were below their expected modal level. We suspect that these students had, at least temporarily, dropped out before completing school. Thus, the user of these data are cautioned to interpret them as relating only to a sample of known high school students who were in school sometime between the ages of 16 and 18, and who could be traced for consecutive interviews. The missing data may produce selectivity biases, affecting the distributions shown in the tables below. We have no evidence as to the nature of this bias, however.

## E. Regression Analyses

In the previous section, the simple, bivariate relationship between years in poverty and the chances of being behind the modal grade was examined. In this section, the relationship between poverty's duration and educational attainment is shown while controlling for other variables. In doing so, a series of regression equations are estimated. The regression models are estimated using ordinary least squares (OLS) with a dichotomous dependent variable. In the statistical literature, this is usually referred to as estimating a linear probability model. We present the OLS regression results using the 18 year old cohort. The OLS equation coefficients for all students are shown in Table 4 below, while definitions of the model's variables appear in Figure 1.

## TABLE 4

### Ordinary Least Squares Regression Models Relating Poverty Duration and Other Variables to the Chances of Being Behind Modal Grade For 18 Year Olds

| Independent Variable | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
|---|---|---|---|---|---|
| Years in Poverty (1.0) | .0159<br>(3.20) | .0156<br>(3.39) | | | |
| ST (1.0) | | | -.1013<br>(2.30) | | |
| LT Poverty (1.0) | | | .1328<br>(2.19) | | |
| Years in Poverty (1.5) | | | | .0158<br>(5.08) | |
| ST Poverty (1.5) | | | | | -.0600<br>(1.65) |
| LT Poverty (1.5) | | | | | .1756<br>(4.05) |
| Sex | -.1435<br>(5.73) | -.1437<br>(5.75) | -.1442<br>(5.78) | -.1439<br>(5.78) | -.1396<br>(5.62) |
| Race | -.006<br>(0.17) | | | | |
| Momedl | -.0571<br>(1.85) | -.5070<br>(1.85) | -.0488<br>(1.57) | -.0484<br>(1.55) | -.0374<br>(1.20) |
| South | .0352<br>(1.12) | .0342<br>(1.11) | .0309<br>(1.00) | .0406<br>(1.33) | .0432<br>(1.43) |
| Ptametg | -.0957<br>(2.22) | -.0961<br>(2.24) | -.0931<br>(2.17) | -.0914<br>(2.13) | -.0820<br>(1.91) |
| Momagbth | .0441<br>(1.18) | .0439<br>(1.18) | .0452<br>(1.21) | .0446<br>(1.20) | .0408<br>(1.10) |
| Singlmom | .0511<br>(1.52) | .0505<br>(1.52) | .0490<br>(1.48) | .0555<br>(1.70) | .0505<br>(1.54) |
| Avinc | -3.63E-06<br>(2.03) | -3.62E-06<br>(2.03) | -3.31E-06<br>(1.88) | | |
| Intercept | .5242 | .5243 | .6109 | .4254 | .4661 |
| R2 | .0805 | .0812 | .0858 | .0838 | .0909 |

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Absolute t-values in parentheses.
Sample size=1380.

## FIGURE 1

## Variables Used in the Regression Equations

### DEPENDENT VARIABLE

| | |
|---|---|
| Modal Grade Attainment | Set equal to 1 if below mode, 0 if at or above mode. |

### INDEPENDENT VARIABLES

| | |
|---|---|
| Years in Poverty (1.0) | Number of years in poverty, poverty ratio=1.0 |
| ST Poverty (1.0) | Dummy variable set=1 if poor 0-2 years, poverty ratio=1.0 |
| LT Poverty (1.0) | Dummy variable set=1 if poor 8+ years, poverty ratio=1.0 |
| Years in Poverty (1.5) | Number of years in poverty, poverty ratio=1.5 |
| ST Poverty (1.5) | Dummy variable set=1 if poor 0-2 years, poverty ratio=1.5 |
| LT Poverty (1.5) | Dummy variable set=1 if poor 8+ years, poverty ratio=1.5 |
| Sex | Dummy variable set=1 if female, 0=male |
| Race | Dummy variable set=1 if black, 0=other |
| Ptamtg | Dummy variable set=1 if 1 if parent ever attended PTA meeting when child very young |
| Momagbth | Dummy variable set=1 if mother was less than 20 at birth of first child |
| Singlmom | Dummy variable set=1 if mother was ever single during childhood years |
| Momedl | Dummy variable set=1 if mother has high school degree or higher educational level |
| Regionl | Dummy variable set=1 if live in South |
| Aveinc | Average yearly family income over period |

The advantage of analyzing the data in this way is that it allows one to better isolate the impact of poverty on educational attainment, while statistically holding all other relevant factors constant. OLS in a linear probability model framework provides estimates of the magnitude and direction of the direct effects of each independent variable on the probability of being behind the modal grade.

There are, however, well known problems with using an OLS approach to estimate models with discrete dependent variables. These problems are discussed, for example, in Hanushek and Jackson (1977). There is a chance that the error term in the model is related to the independent variables, leading to hetroskedasticity. In addition, there is no guarantee that the functional form will result in predicted values of the dependent variable falling within the 0 to 1 range. An error might also be introduced because the true probability that is desired is only being estimated by a 0 or 1 dependent variable, not by the probability itself. In order to address these problems, we also estimated models identical to the OLS models presented here using a logit alogrithm. The results of this logit test proved consistent with those obtained using the OLS regression method. The signs and levels of significance for all of the explanatory variables remained stable, increasing confidence in the rationale for the inclusion and interpretation of these variables. The logit results are available upon request.

The dependent variable in all the regressions is a dichotomous variable indicating whether a student is at or below this expected modal grade level (below modal grade=1 and at or above modal grade=0). The independent variables are also shown in Table 4. These independent variables were selected to represent a range of economic, social and attitudinal factors thought to affect educational attainment. By including these factors in the regression, one is better able to isolate the impacts of poverty on educational attainment while holding constant other events that might also affect such attainment.

The interpretation of these variables' coefficient is as follows: a positive sign indicates that the chances of being behind one's modal grade level increases for every unit increase in the value of the independent variable; a negative sign means that the probability of falling below one's modal grade level decreases with an increase in that variable. For example, equation 1 shows that for each additional year a student spends in poverty, the probability that the student will be below the modal grade in school is expected to increase by .0159 (the coefficient of the years in poverty variable is +.0159). The coefficient for youth's gender (-.1435) shows that females (gender=1) have a probability of being behind their modal grade that is .1435 less than similar males (gender=0).

Poverty was specified both as an individual's actual years in poverty, and as a dummy variable representing no or short periods in poverty (ST poverty) or long term poverty spells (LT poverty). Equations were tested for poverty cutoffs of 1.0 and 1.5, for reasons described above. In all specifications of the model, the sign for poverty's coefficient is positive, whether poverty is measured by the absolute number of years in poverty or was short or long term. That is to say, as one's years in poverty increase, the probability rises that he will fall below the modal grade for his age. These coefficients, in addition, are statistically significant at the 99 percent confidence level.

The estimates for poverty show, more specifically, that even after holding constant a number of other variables thought to affect educational attainment, every additional year in poverty increases the probability of being behind the modal grade by .0159. Thus, one can contrast two students similar in all characteristics except for the number of years in poverty. If one student is in poverty for five years and the other never in poverty, the result sows that the student in poverty would have a probability of being behind the modal grade that is approximately .08 greater than the student never in poverty. Models 3 and 5 present results where years in poverty are grouped by short (0-2) and long (8+) spells. The coefficient of these dummy variables in equation 3, for example, indicate that short periods in poverty would reduce the probability of being behind the modal grade by .1013, while long periods in poverty would increase this probability by .1328.

As can be seen in equation 1, race is not significantly related to educational attainment, nor is it related in any other equation where it was included. One possible explanation for this result is that once social and family factors thought to affect educational attainment are held constant, as they are in these regressions, race has no impact on educational output. That is, the effect of race on educational attainment operates through a number of variables in the equation. For example, since blacks tend to have lower incomes than whites, the influence of race on educational attainment operates through the income variable in this model--assuming income influences attainment. To test this explanation, we entered race into the equations as a first step in a stepwise set of specifications. In doing so, we observed that race had a positive and significant sign--indicating that black students have an increased chance of being below their modal grade level if socioeconomic circumstances are not controlled. As other controlling factors were entered into the regressions, the statistical relationship disappeared.

The literature points to many other factors that might influence educational attainment. We were limited in the variables we could use in this study by the scope of the PSID data; however, we were able to construct a variety of variables that reflect the range of factors thought to affect educational attainment. These are shown in Figure 1. One interesting result involved a question which asked parents if they ever attended a PTA meeting while their child was very young (Ptamtg). We took this as a measure of the degree that parents were involved with their children's education. A consistently significant negative sign shows that when a parent did attend a PTA meeting, the probability that their children would fall below the mode at age 18 decreased. Alternatively, students who had parents who never attended a PTA meeting had a predicted probability of being behind their modal grade level that is more than .09 greater than the probability of a similar youth whose parents did attend PTA meetings.

Other characteristics of the child's parents were also included. In most specifications, mothers who had a high school degree or more (momed) had children who were less likely to fall behind their expected grade level. Similar findings were seen if father's education was included in the equations in place of mother's education (not shown, available upon request). Some of the t-values for parent's education indicate a significance at approximately the 90 percent level--lower than optimal, but still indicative that the characteristic may influence the outcome. Slightly less significant (with a level of significance below 90 percent), but included as controlling variables, were whether a child's mother ever raised the child alone due to divorce or separation (singlmom), and the mother's age when their first child was born (momagbth). Both young mothers and those who were single at some point in their child rearing years had children with increased probabilities of being behind in school. Other studies have found that the number of young children present in a household affected educational outcomes; we could find not such relationship.

Other specifications looked at average annual family income (avinc); as it increased, there was a lower chance for such families' children being behind their modal grade. Because average family income was highly correlated with our poverty measures, and because the coefficient was very close to zero ( annual income was included in the equation in actual dollars), average income was omitted from many specifications (see equations 4 and 5, for example). Omitting the variable did not alter the other results.

To determine if the relationships between the independent variables, particularly duration of poverty, and the chances of being behind modal grade were the same for whites and blacks, we estimated separate models for these subsamples. The results from these specifications confirmed the findings from the crosstabs. An identical specification is shown for all students, and for whites and blacks alone in Table 5; this specification indicates that different structural processes may affect educational attainment in the two groups. A greater number of years in poverty significantly increased the chances being behind one's modal grade for whites, but not for blacks. In addition, the regressions on these white and black cohorts indicate that mothers' education did not affect the educational attainment for whites, but did tend to be related to improved educational attainment measured for blacks, although the t-values are quite small, indicating a very low level of confidence in the coefficients. Being raised by a single mother increased the chances of black children falling behind the mode, but did not affect white achievement. Living in the Southern region loses significance for whites, but weighs heavily for blacks. A mother attending a PTA meeting improved white children's chances of advancing in school, while it did not influence blacks' attainment. Finally, children of younger mothers did poorer in school than children of older mothers for whites, while mother's age had no impact for blacks.

## TABLE 5

## Ordinary Least Squares Regression Models Relating Poverty Duration and Other Variables to the Chances of Being Behind Modal Grade For 18 Year Olds, By Ethnic Group

| Independent Variable | All Children N=1380* | White N=593 | Black N=720 |
|---|---|---|---|
| Years in Poverty (1.0) | .0188 | .0346 | 6.51E-3 |
| | (4.36) | (4.65) | (0.85) |
| Sex | -.1480 | -.1142 | -.2113 |
| | (5.94) | (4.13) | (3.08) |
| Momedl | -.0699 | -.0306 | -.0889 |
| | (2.31) | (0.89) | (1.07) |
| South | .0431 | 8.85E-3 | .1216 |
| | (1.41) | (0.25) | (1.61) |
| Ptametg | -.1013 | -.1425 | -.0606 |
| | (2.36) | (2.79) | (0.55) |
| Momagbth | .0493 | .0821 | .0568 |
| | (1.32) | (1.87) | (0.62) |
| Singlmom | .0638 | .0261 | .1205 |
| | (1.95) | (0.67) | (1.62) |
| Intercept | .4686 | .4527 | .4754 |
| R2 | .0790 | .0602 | .0710 |

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Absolute t-values in parentheses.

* Total sample includes as small number of Asians and other races not shown in the White-Black comparison.

# The Relationship Between School Poverty Concentration and Students' Reading and Math Achievement and Learning

David E. Myers
Decision Resources Corporation

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# Introduction

This report serves two purposes. The first is to describe the characteristics of schools with low, medium, and high poverty concentration. The second is to present research that examines the relationship between school poverty concentration and students' achievement and learning. This relationship provides the conceptual underpinnings of Chapter 1 and its predecessor, Title I. Because of the presumed close tie between poverty concentration and achievement, and because of the availability of poverty statistics for states, school districts, and schools, poverty concentration serves as the primary mechanism by which funds are directed to serve students with low educational achievement.

In the past, many studies have reported on the "poverty-educational achievement" relationship. Most have examined the relationship between family poverty and educational achievement. Results from this line of research have generally documented that students from families with limited material resources have poor educational achievement (see, for example, Jencks et al., 1972). Relatively few studies have focused on the relationship between school poverty concentration--percent of schools' student body living in families with incomes below the official poverty threshold or a modification of this index--and students' educational achievement. Most studies analyzing the importance of family characteristics aggregated at the school level have examined the effect of school socioeconomic status (e.g., average parental education, average family income) on student's achievement. Few have attempted to actually estimate the relationship between school poverty concentration and educational achievement. Those that have are generally flawed for at least two reasons. First, much of the past research has attempted to estimate the relationship with aggregated school achievement scores. As shown in the research literature, the relationship between two variables measured at the group level can be partly attributed to the aggregation process and does not necessarily reflect the relationship between school poverty concentration and students' achievement. As an example, we draw on research by Wolf (1977). Wolf's data shows that as the unit of analysis increases from the student to the school district, the correlation between poverty and educational achievement increases. Using student level data the correlation is about .3, at the school level it increased to .5, and using school districts as the unit of analysis the correlation increases to nearly .6. When attempting to determine the relationship between poverty concentration and achievement the analyst is left in a quandary as to what the true correlation is between school poverty concentration and students' achievement.

The second limitation of most research on this topic is the use of simple correlation coefficients to describe the relationship between poverty concentration and educational achievement. The correlation coefficient only reveals the extent to which poverty and achievement covary with one another, assuming a linear relationship. A correlation coefficient does not show the differences in students' achievement that result from students being in schools with high and low poverty concentration. For example, an analyst could observe a relatively small correlation between school poverty concentration and achievement and a large difference in achievement between students in high and low concentration schools. On the other hand, a large correlation and a relatively small effect (difference) may be observed.

In the research reported here, each of these limitations is taken into account. A statistical model is specified that allows estimation of the relationship between schools' poverty concentration and students' achievement. This model is based on a set of parameters that show the predicted differences in students' achievement scores who are in high and low concentration schools. An added feature of this model is that the effects of school poverty concentration on both achievement and learning can be estimated. Most previous research has focused on achievement and not learning. Learning is defined in this report as changes in achievement over time.

The specific questions addressed in the research reported here are the following:

1. To what extent do characteristics of schools differ by level of school poverty concentration?
2. What is the effect of school poverty concentration on reading and math achievement and learning when no other family and student characteristics are taken into account? That is, to what extent are there differences in reading and math achievement and learning of students from schools with low and high poverty concentrations?
3. What is the relationship between school poverty concentration and students' achievement and learning once student and family characteristics are taken into account?
4. Does the effect of school poverty concentration on students' achievement and learning depend on grade level?

Significant results of these analyses are as follows:

- Schools with high poverty concentrations tend to have low average reading and math achievement scores; high dropout rates; disciplinary problems; high student mobility rates; a large proportion of the student body speaking a language other than English; and a relatively even mix of white, black, and Hispanic students.
- There is a significant, negative effect of school poverty concentration on reading and math achievement at most grade levels.
- The effects of poverty concentration on learning (change in achievement over time) are generally insignificant, except in the early grades.

- For elementary school students, the impact of school poverty concentration on achievement increases between grades 1 and 6.

The remainder of this report first describes the data and the construction of the variables used in the analyses. Second, the characteristics of low, medium, and high poverty concentration schools are presented. Third, a conceptual model for estimating the relationship between school poverty concentration and achievement and learning is discussed. The discussion includes a description of the variables that are included in the model and their hypothesized effects on students' achievement. Fourth, the results of the analysis of the relationship between poverty concentration and students' achievement and learning are reported. Finally, the results are summarized and possible implications of the findings are discussed.

## Data and Variable Descriptions

Two data bases are used in the analyses described here: (1) the Sustaining Effects Study data base (SES) and (2) the High School and Beyond data base (HS&B). The SES is a nationally representative sample of elementary school students. It contains detailed information on parental and family characteristics (e.g., family income, poverty status, parental education, number of siblings, race/ethnicity) for 15,000 elementary school students. This is a subset of a much larger survey that collected data on more than 100,000 elementary school students (see, for example, Hoepfner, Wellesch, and Zagorski, 1977; Hemenway, Wang, Kenoyer, Hoepfner, Bear and Smith, 1978). Every student in the sample was administered a reading and math achievement test in the fall and spring of each year for up to a three year period beginning in 1976. Students who were in grades 1 to 4 in the first year of the survey were administered a total of six achievement tests. Students in grade 5 during the first year of the survey were followed for two years and were administered four achievement tests. Finally, students in grade 6 during the first year of the survey were followed for one year and were administered only one fall and one spring achievement test. In addition to collecting information from students and their parents, data were also collected from principals and teachers in each students' school. A detailed description of the variables used in our analyses appear in Table 1. In addition, univariate statistics for each of the variables are provided.

The analysis of the relationship between poverty concentration and secondary school students' achievement and learning is based on data from the HS&B. HS&B is a nationally representative survey of 25,000 high school sophomores (NCES, 1983). (Both sophomore and senior students are a part of the larger HS&B data base. However, only sophomores were administered achievement tests during two periods of time and thus, we focus on this cohort of students.) During the base year of the survey (1980) students were administered questionnaires that collected information on family background and student characteristics (e.g., family income, parental educational attainment, number of siblings, race/ethnicity), parent's aspirations for students, student's plans, self-reported grades, and course taking. Each student was administered a battery of achievement tests, including tests in reading and math achievement. A detailed assessment of the tests is reported in Heyns and Hilton (1982). In 1982, the sophomore cohort was again administered achievement tests and asked to provide information on characteristics and attitudes similar to those obtained during the 1980 survey. A detailed description of each of the variables used in the analyses is presented in Table 2 along with summary statistics of the variables.

It is anticipated that the estimates derived from the high school sample will be attenuated to a greater degree than those from the elementary school sample. The high school data refer to parental and family characteristics reported by students. Similar data for the elementary school age sample of students were obtained directly from the parents. Thus, greater measurement error in the variables is expected in the high school sample than the elementary school sample, and in turn, greater attenuation of the parameter estimates. The extensiveness of measurement error in the HS&B data has been investigated by Rosenthal, Myers, Milne, and Ellman (1983).

## Descriptive Analysis of the Characteristics of Low, Medium, and High Poverty Concentration of Schools

This section examines the characteristics of schools defined as having low, medium, and high poverty concentration. Separate results are presented for elementary and secondary schools. For purposes of this analysis, low, medium, and high concentration schools are defined as those that are in the lower quartile (less than 25 percent), two middle quartiles (25 percent to 75 percent), and the upper quartile (greater than 75 percent) of the distribution of schools by percent of students in poverty. Separate distributions are used for the elementary and secondary schools. For elementary schools, those with less than 7 percent of their students in poverty are classified as low poverty schools, those with 7 percent to 24 percent are defined as medium poverty schools, and schools with more than 24 percent of their students in poverty are classified as high concentration schools. Among high schools, those with less than 10 percent of their student body living in poverty are assigned to the low poverty category, those with 10 percent to 30 percent are classified as having medium poverty concentration, and those with more than 30 percent are defined as high poverty concentration schools.

### Characteristics of Elementary Schools

Table 3 presents the results for elementary schools. There are five general classes of variables shown in Table 3: (1) school climate, (2) compensatory education related characteristics, (3) demographic characteristics, (4) student mobility, and (5) average reading and math achievement levels of schools.

School Climate. Principals' reports about vandalism and violence are used to measure school climate. When principals are asked about the "climate" in their schools, those in high concentration schools are more likely to report that their schools have problems than principals in low and medium concentration schools. While the differences in responses for principals in low, medium, and high concentration schools are not large, they do follow a consistent pattern: high concentration schools are reported to have the greatest problems in terms of vandalism and physical violence, followed by medium and low concentration schools, respectively.

Compensatory Education. Characteristics pertaining to the provision of compensatory education services are related to poverty concentration, as would be expected. For example, nearly 81 percent of the schools that have high poverty concentration are also classified as Title I schools, while 44 percent of the low concentration schools are similarly classified. Medium concentration schools fall between these two extremes. Among high concentration schools it is observed that about 11 percent are defined as "other CE schools" while 37 percent of the low concentration schools have this classification. Only 8 percent of the high poverty concentration schools have no compensatory education services. Among medium and low poverty concentration schools, 11 and 19 percent, respectively, have no compensatory education services. The variables measuring percentage of students receiving Title I reading and math services in a school show that high concentration schools provide higher percentages of their student body with reading and math services than low concentration schools. For example, on average, in low concentration schools only 7 percent of students receive Title I reading and 22 percent of all students in high concentration schools receive Title I reading services.

Demographic Characteristics. The demographic characteristics of schools refer to racial and ethnic mix and the percentage of students who speak a language other than English. Examination of the race/ethnicity of schools shows that in high concentration schools, 53 percent of the student body is white, 32 percent is black, and 12 percent is Hispanic. Larger variability in the race and ethnic mix is observed in low and medium concentration schools than high concentration schools. Both low and medium poverty concentration schools are more likely to have high concentrations of white students and a small fraction of blacks and/or Hispanic students than schools with a high proportion of the student body in poverty. With respect to the percentage of students who speak a language other than English, it is observed that low concentration schools are somewhat more likely to have a small percentage (6 percent) of their students speaking a language other than English than medium (11 percent) and high concentration schools (19 percent).

Student Mobility. The student mobility rates reported here refer to the sum of the percent of students entering a school and the percent of students leaving a school during the school year. Comparing student mobility in low, medium, and high concentration schools shows that high concentration schools have mobility rates that are nearly twice that of low concentration schools (23 percent versus 14 percent) and slightly higher than medium concentration schools.

Reading and Math Achievement. The last characteristic of elementary school examined is mean reading and math achievement, by grade during the first year of the SES survey. Across all grades for both reading and math achievement it is apparent that low concentration schools have, on average, higher reading and math achievement scores than schools with high poverty concentration. A common procedure for assessing this relationship is to correlate poverty concentration with mean achievement. In doing so, one usually observes a correlation of about -.5 (see, for example, Wolf, 1977). This shows that knowledge of schools' poverty concentration allows the analyst to account for about 16 percent of the variation in school achievement. For the elementary schools analyses here, the proportion of the variation in reading and math achievement that can be accounted for by knowing school poverty concentration ranges from .10 to .35, and thus is in line with previous findings.

## Characteristics of High Schools

In Table 4 results are presented for a nationally representative sample of high schools. With the exception of student mobility, the variables are comparable to those used for elementary schools: they are school misbehavior, participation in Title I, demographic characteristics, and reading and math achievement and rates of dropping out of high school.

School Climate. The indicators of school climate as reported by principals refer to problems in a school related to physical conflicts among students and teachers, robbery and theft in schools, cutting classes, and student absenteeism. Examination across all five variables shows that principals in schools with low poverty concentration report that there are generally fewer problems in their schools than principals in high concentration schools. That is, principals in low concentration schools are less likely to perceive that students' behavior (e.g., cutting class, physical violence) is problematic than principals in high concentration schools.

Participation in Title I and Related Services. While the High School and Beyond does not provide extensive information on compensatory education related services, data are available on whether a school participated in Title I, and the percent of 10th grade students taking remedial reading and math courses. The data show that as poverty concentration increases, there is a corresponding increase in the percent of schools participating in Title I, as expected. More than 71 percent of the high concentration schools responded that they were a Title I school and only 42 percent of the low concentration schools indicated that they participated in Title I. On the average, more than 55 percent of the schools report that they participate in Title I. In addition, schools with high poverty concentration have more than twice the proportion of students taking remedial reading and math courses as do schools with low poverty concentration (22 versus 8 percent).

Demographic Characteristics. Regarding the demographic characteristics of schools, it is apparent that high concentration schools tend to have a similar mix of white, black, and Hispanic students, while low concentration schools generally have a large concentration of white students and a relatively small proportion of minority students. In high concentration schools, on average, 40 percent of the student body is white, 28 percent black, and 32 percent Hispanic. In low concentration schools, on average, 85 percent of the student body is white, 5 percent black, and 10 percent Hispanic. High concentration schools also tend to have more students who speak a language other than English than low concentration schools (20 percent versus 6 percent).

Reading and Math Achievement and Dropout Rate. The final characteristics examined are average reading and math achievement, and percent of students who drop out of high school. For both sophomores and seniors, students from low concentration schools have, on average, higher reading and math achievement scores. The correlation between achievement and school poverty concentration is about -.60. In other words, by knowing schools' poverty concentration, it is possible to account for 36 percent of the variation in school mean achievement. Finally, schools with a high poverty concentration have dropout rates that are more than twice as large as low concentration schools (15 percent versus 6 percent).

## Conceptual Model and Variables

This section first describes the model that is the basis of the statistical analysis of the relationship between school poverty concentration and students' achievement and learning. Second, the variables used in the analysis and their hypothesized effects on achievement and learning are discussed.

### The Conceptual Model

To estimate the gross and net effects of poverty concentration on school achievement and learning, a statistical growth model is formulated. The model begins with the following specification:

$$(1) \quad A_{itj} = \pi_{0ij} + \pi_{1ij}T_{itj} + u_{itj} \quad (i=1,\ldots,n_j;\ j=1,\ldots,J;\ t=1,\ldots,K)$$

where $A_{itj}$ refers to the achievement (i.e., reading or math achievement) of the ith student at time t in the jth school; T=t-1 when K=2, otherwise t is coded in months beginning with 0; $u_{itj}$ is a random error term with $(Eu_{itj}) = 0$, and $E((u_{itj}), (u_{itj})) = \sigma^2$ for $i = i'$ and $= 0$ for $i \neq i'$; $\pi_{0ij}$ corresponds to baseline achievement (i.e., achievement at the time of the first measurement period); $\pi_{1ij}$ indicates the rate of change in achievement (i.e., learning) between time t and t-1.

This specification of the model assumes that changes in achievement over time occur in a linear fashion. More complicated specifications may be proposed (Strenio, Weisberg, and Bryk, 1983); however, when using only two measurements of achievement for each student as done in many of the analyses described in this report, the linear specification is the most complicated form that can be supported by the data. Further, use of a linear specification considerably simplifies the discussion of the results. A subset of the analyses uses achievement scores obtained at six points in time.

To capture the effects of poverty concentration and other variables on achievement and learning, the relationships between these variables and the two parameters in equation (1) are specified:

(2) $\pi_{0ij} = X_{ij} B_1 + G_j B_2$

(3) $\pi_{1ij} = X_{ij} B_3 + G_j B_4$

where $X_{ij}$ is a vector of student and family characteristics (including a constant, unity) that are assumed to remain constant over time; $G_j$ is a vector of school level variables such as poverty concentration; and $B_1$, $B_2$, $B_3$, and $B_4$ are conformable vectors of parameters to be estimated. Using equation (3), it is possible to show that the impact of poverty concentration on learning in a specific subject, such as reading, is equal to $B_{4k}$ where k indicates the specific parameter linking poverty concentration to the learning parameter, $\pi_{1ij}$. Thus, for every percentage point change in poverty concentration, it is expected that the rate of learning in a specific subject area will change $B_{4k}$ units.

To determine the effect of poverty concentration on achievement, equations (2) and (3) are substituted into equation (1):

(4) $A_{itj} = X_{ij} B_1 + G_j B_2 + T_{itj} X_{ij} B_3 + T_{itj} G_j B_4 + u_{itj}$.

From equation (4), it can be shown that the effect of poverty concentration on students' achievement is $B_{2k} + T_{itj}B_{4k}$. From the definition of the effect of poverty concentration on achievement, it is apparent that there are three elements that come into play. First is the effect of poverty concentration on achievement during the first measurement period (t=1). Second is the effect of poverty concentration on learning between two points in time, $B_{4k}$. Third is the length of time between the initial measurement of achievement and the point in time that is of interest, time T.

As already noted, estimates of the gross impact of poverty concentration on students' achievement and learning as well as the net effect are obtained. In estimating the gross effect, all student and family variables from equations (2) and (3) are excluded. The estimates of $B_2$ and $B_4$ can then be used to calculate the desired quantities. The gross effects of poverty concentration show the differences in achievement and learning of students in high and low concentration schools when no other variables are taken into account. Thus, the gross effects of school poverty concentration on achievement capture differences in other family characteristics, and student and school characteristics that are associated with being in high and low concentration schools. The net effect of poverty concentration on achievement and learning can be obtained directly from equation (4). The estimates of the net effects show the extent to which there are differences in achievement and learning attributable to school poverty concentration after the effects of family and student characteristics are statistically held constant.

The parameters in equation (4) are estimated via ordinary least squares. In doing so, a number of assumptions are necessary: (1) the expected value of the errors equals 0, (2) the error variance is equal across all individuals, time periods, and schools, and (3) the errors for each individual across time periods are not correlated with one another. Under these assumptions, unbiased and efficient parameter estimates are obtained. Alternative methods are available; however, provided with both the large number of schools in the samples, students, and independent variables, estimation with the alternative procedures would have been prohibitively expensive.

## Analytic Variables

The independent variables included in the statistical analysis are, in general, those that have been observed as significant determinants of students' educational achievement with the exception of school poverty concentration. Poverty concentration is discussed first, followed by a discussion of the student and family variables that are included in the statistical analysis.

- School Poverty Concentration. Students in schools with high poverty concentrations are expected to have lower achievement and to learn at a slower rate than students in schools with low levels of poverty concentration. This hypothesis is indirectly derived from research that shows that students in schools with low average family socioeconomic status tend to have low achievement scores (see, for example, Coleman, Campbell, Hobson, McPartland, Mood, Weinfeld, and York, 1966). Coleman and his associates conclude from their analysis of the EEOS data that school socioeconomic status has more of an effect on achievement than all other variables, except for family socioeconomic status. Other studies have reached similar conclusions. For example, McPartland and York (1967) found in their reanalysis of the EEOS data for ninth grade blacks that even after they statistically held constant family socioeconomic status and classroom composition, there was a positive relationship between school socioeconomic status and verbal achievement. While much attention has been devoted to general concepts of school socioeconomic status, much less attention has been focused on poverty concentration in schools and its consequences. However, a study by Wolf (1977) concludes that the correlation between school level poverty and students' achievement is about -.5. Unfortunately, Wolf did not attempt to take into account other variables that may have been correlated with both poverty concentration and students' achievement. While Wolf's results indicate a strong relationship between school poverty concentration and achievement, Jencks et al. (1972) report that differences in economic affluence of families in schools tends to have only small effects on actual test performance.

- Student Gender. It is hypothesized that elementary school-age girls will perform at a higher level in both reading and mathematics than boys (see, for example, Fennema, 1974; Fennema and Sherman, 1977). By the time they reach high school, though, we expect to find that boys have higher levels of performance than girls, particularly in mathematics. This cross-over may be due in part to differences in socialization processes and course taking practices experienced by boys and girls as they move through the educational system.

- Student's Race and Ethnicity. Previous research has shown that white students have higher achievement and learn at a faster rate than black students (see, for example, Jencks et al., 1972). While much less research has focused on differences in achievement and learning of Hispanic children, we anticipate that these youth will tend to score between white and black students (see example, Myers and Milne, 1983; Okada, Cohen and Mayeske, cited in Mosteller and Moynihan, 1972).

- Number of Parents in a Student's Family. Much attention has been devoted to assessing the effects of being form a single parent family on students' school performance (see, for example, Hetherington, Camara, and Featherman, 1981). Reviews of the research literature generally conclude that the results are mixed. This lack of consistency may be partly attributed to differences in methods and conceptualization of the processes linking single parent status to educational outcomes. Based on research by Milne, Myers, Rosenthal, and Ginsburg (forthcoming) and Myers, Milne, Baker and Ginsburg, (1985) it is expected that students in single parent families will have lower achievement than those from families with two parents present. Analysis of the impact of being from a single parent family on learning shows that weak, but generally negative effects should be expected (Myers et al., 1985). The observed relationship between being from a single parent family and poor school performance may be in part due to low family income, high levels of stress in the household, and less parental time to manage children's activities.

- Maternal Work. Maternal work has been observed to have differential effects on education related outcomes (see, for example, Heyns, 1982). Heyns concludes from her review of the research literature that achievement related outcomes are largely unrelated to maternal employment. However, recent research using the two data based employed here (i.e., Sustaining Effects and High School and Beyond) suggest that maternal work has a negative effect on students' achievement (Milne et al., forthcoming; Myers et al., 1985). Thus, it is anticipated that a negative relationship between our measure of maternal work, and achievement and learning will be observed.

- Family Socioeconomic Status. The research literature addressing the effects of family socioeconomic status on school performance is vast and it is generally accepted that students from families with high socioeconomic status perform at higher levels than similar students who reside in families with low socioeconomic status (see, for example, Konstant and Apling, 1984; Jencks et al., 1972; Coleman et al., 1966; Milne et al., forthcoming). However, as shown by Myers et al. (1985), the effects of family socioeconomic status on learning are not as consistent as those on achievement. However, in most instances a positive relationship is observed, particularly for white males and females. In this research two measures of family socioeconomic status are used: (1) mother's educational attainment and (2) whether a student's family lives in poverty. It is expected that students from families with a mother with high educational attainment or from families who have high incomes will be in an environment where education is valued, there are high educational attainment expectations for youth, and other intellectual and material resources will be available that will facilitate high achievement and learning rates.

- Number of Siblings. For students from families with a large number of siblings, it is hypothesized that there will be fewer intellectual and material resources available to each child in the household than for students with few siblings, and in turn, they will have lower achievement and rates of learning (Zajonc, 1976).

- Language Minority Status. Over the past 20 years, research has shown that language minority youth generally do not perform as well on achievement tests as native English speaking students. Recent analyses of the Sustaining Effects Study data (Rosenthal, Baker, and Ginsburg, 1983) and High School and Beyond data (Myers and Milne, 1983) confirms these findings. Much of the difference in achievement between language minority students and English only students is attributable to differences in family socioeconomic status; however, almost 50 percent of the difference for the two groups is not accounted for by socioeconomic status (Rosenthal et al., 1983). Rosenthal et al. also conclude that reading achievement is more strongly influenced by being a language-minority student then is math achievement and that the effect of language on reading and math learning is either weak or inconsistent. Thus, it is anticipated that non-native English speaking students will have low achievement and perhaps, learning.

## Effects of Poverty Concentration on Students' Achievement and Learning

In this section the gross and net effects of school poverty concentration on elementary and secondary school-aged students' achievement and learning are described. The gross effect refers to the impact of poverty concentration on each of the outcomes when there are no family and student variables included in the statistical models. The net effect refers to the impact of poverty concentration on achievement and learning when the effects of family and student characteristics are statistically held constant. The first analyses presented for elementary school-aged students are based on estimates derived from achievement measured at two points in time, by grade. These analyses show whether the effect of school poverty concentration on achievement and learning during a one year period differs by grade. A second set of analyses is based on achievement measured at six points in time for students in grades 1 to 4. Examination of achievement and learning over a three year period provides an indication of the cumulative impact of school poverty concentration. Further, by conducting separate analyses for each grade cohort, it is possible to assess whether school poverty concentration changes as students progress through school. By conducting alternative analyses of the elementary school data (i.e., using single year data and three years of data) a number of counterintuitive results are obtained. However, the general conclusions remain the same. Next, results from the sample of high school students are presented. After presenting the effects of poverty concentration, the effects of the student and family variables in the equations are described. It is noted at this point, though, that in early all cases the estimated effects of the student and family variables are in the hypothesized direction.

## Elementary School Age Students

### Gross Effects, Achievement Measured at Two Points in Time

Table 5 displays the gross effects of school poverty concentration on reading and math achievement and learning for elementary school-aged students. The estimation equations which yielded these results are shown in Table 6. The students in each grade refer to those in a specific grade during the first year of the Sustaining Effects Study. Examination of the gross effects of poverty concentration on achievement and learning shows that in nearly all grades there is a negative relationship between poverty concentration and both reading and math achievement. Only in grade 1 is there a negative effect of school poverty concentration on the rate of learning; that is, the rate at which students' reading achievement changes between the fall and spring of grade 1 is negatively related to the level of school poverty concentration. Students who are in grade 1 and in high concentration schools learn at a lower rate than those in low concentration schools. After grade 1 poverty concentration has no influence on the rate at which students learn during a single year. Provided that achievement test offered during fall grade 1 tend to be less reliable than other tests, these results should be interpreted with some caution.

Finding that poverty concentration influences achievement in the fall and spring but not learning between these two points in time appears to be a contradiction. That is, how can poverty concentration influence fall and spring achievement and not the rate of change in achievement between the two time periods? To understand this finding I briefly return to the elements of the statistical model that are the basis of this result:

1. the effect of poverty concentration on fall achievement $=B_{2k}$,
2. the effect of poverty concentration on spring achievement $=B_{2k}+B_{4K}$, and
3. the effect of poverty concentration on the rate of learning $=B_{4k}$.

The empirical analysis of the SES data shows that in most cases the effects of poverty concentration on fall and spring achievement are statistically significant and negative in magnitude, yet there is a null effect on learning. The only way for school poverty concentration to influence fall and spring achievement and not the rate of learning is for the effect on fall (baseline) achievement to carry over to spring achievement. This shows that students in schools with high poverty concentration come into the academic year with initially low achievement and finish the year with achievement that is not significantly greater than that in the fall.

Before considering other results it is important to consider why school poverty concentration should have a large impact on students' basic reading and math skills during the fall of grade 1, a point in time where students have attended elementary school for only a few months at best. It may be that school poverty concentration is related to neighborhood and family characteristics or preschool attendance characteristics not included in the statistical model and thus, the relationship between school poverty concentration and grade 1 achievement in the fall may be a function of school poverty concentration serving as a proxy for other, unmeasured variables.

In Figure 1, the gross effects of school poverty concentration on reading and math achievement are plotted against grade level. From this figure it is possible to compare how the effects of school poverty concentration change as students progress through elementary school. The trend of the gross effects on reading achievement shows that the effect becomes increasingly negative between the fall and spring of each grade. There is a particularly dramatic shift in the effect of poverty concentration on reading achievement during the first grade (-.27 to -.72). After this large shift in effect, it is observed that the slope continues downward, but not as steeply as in grade 1. (This is a restatement of the fact that school poverty concentration has a significant, negative effect on the rate of learning in grade 1, but not in the other grades).

With the exception of the dramatic shift in grade 1, the effect of poverty concentration on math achievement over grade levels generally parallels the curve for reading achievement. The change in effects on reading and math achievement actually produces a cross-over in grade 1. Initially, the impact of poverty concentration on reading achievement is less than or about equal to that on math achievement. By the spring of grade 1, though, school poverty concentration has a larger impact (at least numerically) on reading achievement than math achievement.

This trend--the effect of poverty concentration on students' achievement becoming increasingly negative--shows that there is a greater disparity in the achievement of students in high and low poverty concentration schools as they move through elementary school. That is, each year the gap in achievement between students in high and low concentration schools generally enlarges in each succeeding grade.

### Net Effects, Achievement Measured at Two Points in Time

Table 5 also shows the net effects of poverty concentration on reading and math achievement and learning. The estimation equations are shown in Table 7. With respect to the estimated effects of poverty concentration on students' achievement and learning while controlling for family and student level variables (i.e., the net effects), it is found that in almost all instances, poverty concentration has a significant, negative impact on students' achievement and in no instance does it affect learning. More specifically, reading achievement in both the fall and spring are both influenced negatively by school poverty concentration for students in grades 2 through 6. Only in grade 1 does poverty concentration not influence reading achievement after account is taken of student and family characteristics. Here poverty concentration has a significant, negative impact in the spring but not the fall, as was previously seen in the gross effects analysis. The estimate for fall achievement, however, is negative and therefore, in the predicted direction.

On average, these estimates show that each percentage point of increase in a school's poverty concentration, there is a decline of about one-third of a test score unit (VSS). Although this effect appears small, if one were to compare, for example, a student in a school with 10 percent of its students in poverty with another student that was in a school with 30 percent of its students in poverty, it would result in a difference of seven units in reading achievement, even if all other student and parent characteristics included in the model are equated. This seven point difference corresponds to about four percentile points, and while it is by no means a large effect, it does indicate that even after taking into account student and family characteristics, students' achievement in high and low concentration schools does differ to some extent.

In Figure 1, the net effects of school poverty concentration on achievement are plotted against grade level. In contrast to the gross effects, the net effects remain relatively stable over all grades. Only for reading achievement is there a small, but significant decline in the net effect of poverty concentration.

### Gross Effects, Achievement Measured at Six Points in Time

The gross effects of school poverty concentration on achievement and learning using the three years of achievement scores for students in grades 1 to 4 are presented in Table 8. The estimation equations are specified in Table 9. In general, when student and family characteristics are not controlled, high school poverty concentration is associated with low baseline reading and math achievement scores. Further examination shows that the size of the effect of poverty concentration on baseline reading and math achievement becomes increasingly negative from one grade to the next. This pattern is quite similar to that observed in the analysis of the data for each grade in the first year of the SES.

Examination of the results in more detail shows that the gross effects of poverty concentration on changes in reading achievement over time are significant and negative for grade cohorts 1 to 3, but not 4. Unlike the gross effects on achievement, the gross effects on changes in reading achievement (learning) are larger in the grade 1 cohort than in the later grade cohorts. For the grade 1 cohort it is estimated that the impact of school poverty concentration on reading learning is -.03. This indicates that if two students were compared, one in a school with poverty concentration of 30 percent and another in a school with 10 percent poverty, the reading achievement of the student in the school with high concentration after a three year period would be 21 points less than that of the student in the low concentration school. For the grade 3 cohort -- the cohort with the last significant effect -- the effect is 33 percent smaller than the effect for the students in the grade 1 cohort (-.03 versus -.02).

Examination of the gross effects of school poverty concentration on changes in math achievement during a three year period shows mixed results. Only for students in the grade 2 and grade 3 cohorts are the effects significant and negative. For both of these grade cohorts the effects on learning for math are about the same size as for reading.

## Net Effects, Achievement Measured at Six Points in Time

The net effects of poverty concentration on math achievement and reading are presented in Table 8. The estimation equations for the net effects are provided in Table 10. The net effects of school poverty concentration on baseline reading achievement are consistently negative for each grade cohort. For math achievement the only significant, negative net effect is observed in the grade 1 cohort. Negative, but insignificant effects are observed in the grade 2 to 4 cohorts. As would be expected, the estimated effects are considerably smaller than the gross effects once student and family variables are statistically held constant.

The estimates from these models suggest that there is only limited evidence that school poverty concentration has a net effect on learning. Students who are in the grade 1 cohort and in schools with high poverty concentration tend to have smaller gains in reading achievement than similar students in low concentration schools. In no other grade cohort does poverty concentration influence changes in reading achievement once student and family characteristics are taken into account. The only instance where school poverty concentration influences learning in mathematics is for the grade 2 cohort of students. In none of the other three cohorts is there a significant, negative effect.

The analysis of the single year data (i.e., achievement measured at two points in time) by grade, showed that poverty concentration had little net effect on changes in reading or math achievement over time. When three years of data are used to analyze changes in achievement, a significant negative effect for poverty concentration on reading is observed for the grade 1 cohort. For math, a significant net effect of poverty concentration on math learning is detected in the grade 2 cohort. Additional analyses attempted to assess why these differences resulted. In these further analyses, it was assumed that achievement was not linearly related to time. Rather, the growth model was structured in such a way that the learning trajectory could follow any curve. (The results are not provided in this report; rather, they are merely described in the text.)

The analysis of the relationship between poverty concentration and learning shows that the effect of poverty concentration on learning between fall and spring in grade 1 reading is not significant. However, poverty concentration does negatively influence learning between fall grade 1 and fall grade 2 as well as all later time points. This finding can be interpreted as follows. Students in grade 1 and in high and low concentration schools begin the year with a small gap in reading achievement and learn at about the same rate during year 1. That is, the gap in their relative achievement scores does not become larger between the fall and spring of year 1. On the other hand, the gap in relative achievement for students in high and low concentration schools significantly increases between fall grade 1 and fall grade 2.

A possible explanation for this may be that students who are in high concentration schools suffer a significant absolute or relative decline in achievement during the summer between grades 1 and 2. Evidence by Heyns (1978) would support such a contention. However, the analysis conducted here shows this is not the case. The relative gap in reading achievement measured during spring grade 1 does not increase significantly by fall of grade 2. Thus, differences in the rate of learning between spring grade 1 and fall grade 2 cannot completely account for an increase in the achievement gap between fall grade 1 and fall grade 2. Instead, it appears that it is the cumulative experience of students in high and low poverty concentration schools between fall grade 1 and fall grade 2 that produces the increase in the reading achievement gap. Further analysis of the results show that school poverty concentration only influences changes in achievement when fall grade 1 is used as the baseline.

As already noted, school poverty concentration only has a net effect on changes in math achievement over time for students in the grade 2 cohort. Focusing on this grade cohort and performing an analysis equivalent to that performed on reading achievement shows that the only significant shift in cumulative achievement is observed between fall grade 2 and spring grade 4. All other changes from the baseline (fall grade 2) are not statistically significant. Contrasting spring grade 4 achievement with all other time points shows that poverty concentration significantly influences shifts in short- and long-term achievement. In no other cohorts is a significant effect detected.

This result is quite different from that obtained for reading achievement. There it was observed that the only significant poverty concentration effects were detected when the initial period of measurement (fall grade 1) was used. Here, the opposite is observed. This finding suggests that poverty concentration has a large negative impact on math achievement measured in the spring of grade 4. Thus, the relative gap in math achievement substantially increases between students in high and low poverty concentration schools during grade 4 and not earlier grades.

## High School Sophomores

Estimates of the gross and net effects of school poverty concentration on reading and math achievement and learning for high school sophomores are presented in Table 11. The estimation equations are shown in Tables 12 and 13, respectively. The gross effects are presented first, followed by the net effects of school poverty concentration.

### Gross Effects

School poverty concentration has significant, negative effects on reading and math achievement during both students' sophomore and senior year of high school and has no influence on learning. The estimates of the gross effects for reading achievement show that for each percentage point increase in poverty concentration, there is a corresponding decline of about .10 test units. Thus, contrasting reading achievement of a student in a school with say, 10 percent of its students in poverty with another student in a school with 30 percent of its student body in poverty shows that there would be a difference in achievement of .28 standard deviation units.

Examination of the gross effect of school poverty concentration on math achievement shows that a 20 percentage point difference in poverty concentration is associated with a difference in math achievement of more than .5 standard deviations.

### Net Effects

After student and family characteristics are statistically held constant, there are substantial declines in the effects of school poverty concentration on reading and math achievement as a sophomore and senior. That is, the net effects are only about one-half as large as the gross effects. The pattern of the net effects is similar to that of the gross effects: senior estimates for achievement are somewhat larger, though, not significantly larger than the sophomore effects and the estimates of the net effects on math achievement are larger than those on reading achievement. Again, school poverty concentration does not influence learning.

## Effects of Student and Family Variables

In this section of the report, the effects of the student and family variables on reading and math achievement and learning are briefly reviewed. This allows the reasonableness of the results to be checked. For elementary and high school aged students, the data show that elementary school aged girls have higher achievement than boys, and by high school, boys score higher than girls, particularly in math; blacks and Hispanics score below the non-black, non-Hispanic students; students whose mothers' work have lower achievement than those whose mothers' do not work; being in a large family or single parent family is associated with low achievement; having a mother with high educational attainment is related to high achievement scores and in a number of instances, learning; in a number of cases low family income is associated with low achievement; and among elementary students "speaking a language other than English at home" is weakly, but negatively associated with low achievement. For the sample of high school sophomores, speaking a language other than English is positively related to achievement. This result is somewhat counterintuitive and may be a function of the measure of language use employed here. (High school students who indicated that either at home, or some point in their life they spoke a language other than English were considered as "speaking a language other than English".)

## Summary and Conclusions

From the results of the research reported here, two general conclusions can be reached. First, both elementary and high schools with high poverty concentrations are differentiated from low concentration schools demographically and by the behaviors of students enrolled in them. Students enrolled in high concentration schools are more likely to be black or Hispanic, speak a language other than English, and to have low achievement. Further, the principals of high concentration schools are more likely to report that behavior of students is problematic than principals in low concentration schools.

Second, students in schools with high poverty concentration generally have lower achievement than those in low concentration schools even after taking into account student and family characteristics. However, there is sufficient variability in the rate of learning in reading and math between schools with high and low concentrations that in most analyses systematic differences in the rate at which achievement increases are not detected. When differences are observed, they are usually in the early grades of elementary school.

These results show that students in high concentration schools are in an environment that is less than ideal and tend to have lower achievement than those in schools with relatively few students living below the poverty threshold. An important implication of the findings reported here is that, other than for students in the early grades, attending a school with a high poverty concentration will not necessarily place a student further behind in achievement than his or her peers in low concentration schools. However, students in high concentration schools will continue to remain behind their peers in schools with relatively few students living in poverty. Students in the early grades, however, may fall behind their peers during the first year or two if they are in a high rather than low concentration school. The data supporting this conclusion are rather weak and should be interpreted with some caution.

What are the implications of these findings for Chapter 1, and compensatory education more generally? First, the provision of directing funds to schools with high poverty concentrations and, in turn, educationally disadvantaged students is supported by the empirical evidence reported here. Second, it may be important to provide programs to students as they enter elementary schools. The results presented here show that students in high concentrations schools tend to enter with low reading achievement and quickly fall behind similar students in low concentration schools. After grade 1, the impact of school poverty concentration remains relatively constant.

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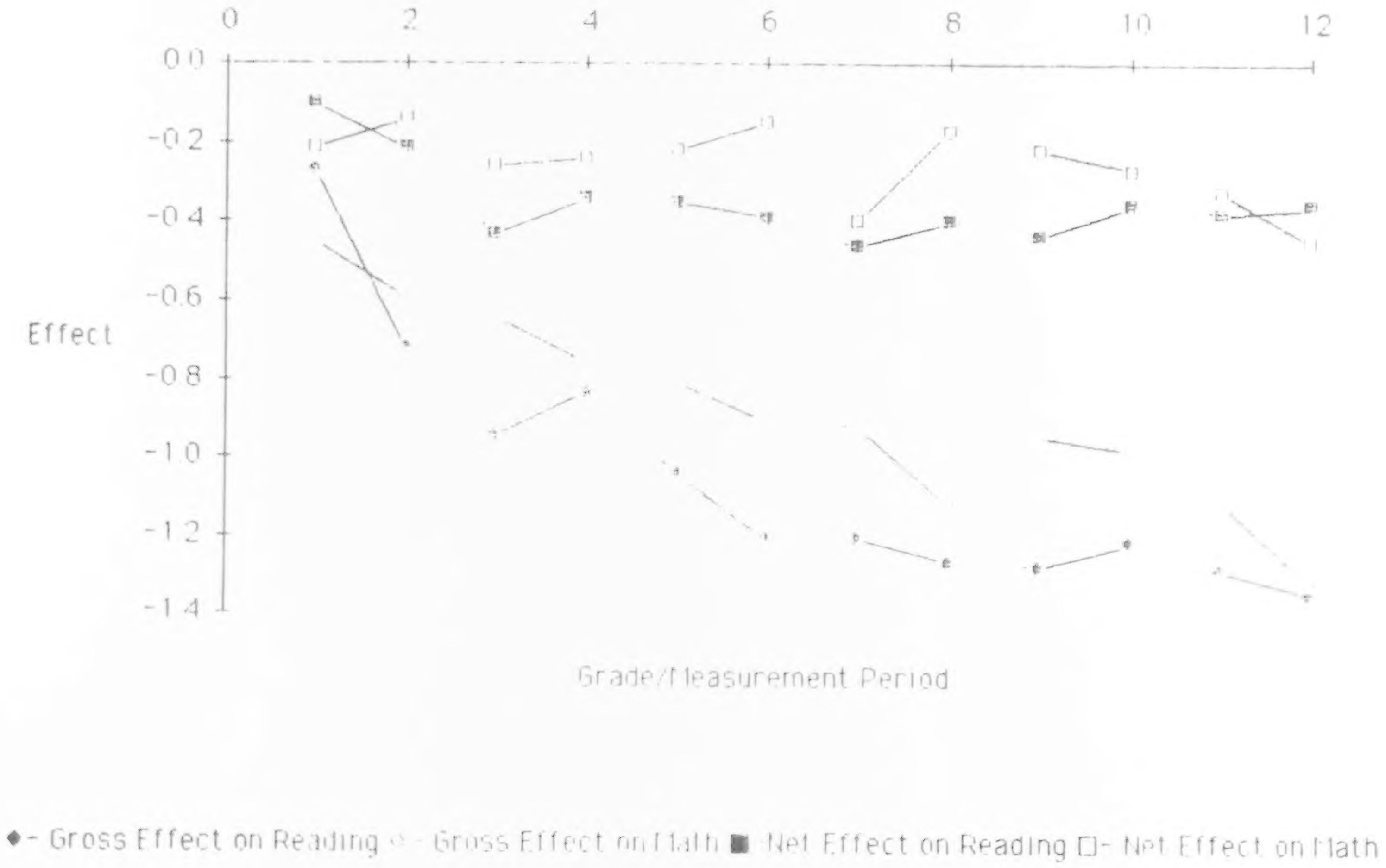
Figure 1 Gross and Net Effects of School Poverty Concentration on Reading and Math Achievement, by Grade for Elementary School Aged Students



## TABLE 1

### Variable Descriptions: Elementary School Sample

| Variable | Description | Mean | Standard Deviation |
|---|---|---|---|
| Title I | Coded as 1 if school is a Title I or Title I and other compensatory school, 0 if not. Derived from CER032. | .65 | .48 |
| Other CE | Coded as 1 if school is only an Other Compensatory Education School, 0 if not. Derived from CER032. | .23 | .42 |
| No CE | Coded as 1 if school has no Compensatory Education, 0 if not. Derived from CER032. | .12 | .33 |
| Free Lunch | Percent of sample children in school who receive free/reduced price lunch. Derived from SBC007. | 36.39 | 29.88 |
| Student Mobility | Percent of students moved into school, plus percent of students moved from school, not exceeding 99.8. Equals PA039. | 20.07 | 20.01 |
| Extent of Vandalism | Coded as: 4 = a great deal, 3 = average amount, 2 = less, 1 = no. Equals PQ016. | 2.95 | .64 |
| Extent of Physical Violence | Coded as: 4 = more, 3 = same, 2 = less, 1 = no. Equals PQA017. | 3.03 | .64 |
| Title I Reading | Percent of sample children in Title I school who receive Title I Reading Services, or Title I and Other Compensatory Education in Reading Services. Derived from CER014. | 14.14 | 16.80 |
| Other CE Reading | Percent of sample children in Title I school who receive Other Compensatory Education Reading Services. Derived from CER014. | 4.89 | 14.01 |

Table 1 (continued)

| Variable | Description | Mean | Standard Deviation |
|---|---|---|---|
| Title I Math | Percent of sample children in Title I school who receive Title I Math Services, or Title I and Other Compensatory Education Math Services. Derived from CER015. | 7.65 | 14.93 |
| Other CE Math | Percent of sample children in Title I school who receive Other Compensatory Education Math Services. Derived from CER015. | 4.54 | 15.74 |
| Percent Title I | Percent of children in school receiving Title I services. | 13.51 | 21.69 |
| Percent Free Lunch | Percent of children in school receiving free lunch. | 26.92 | 26.63 |
| Percent White | Percent of sample children in school whose race/ethnicity is white. Derived from HQ062. | 77.64 | 30.22 |
| Percent Black | Percent of sample children in school whose race/ethnicity is black. Derived from HQ062. | 13.57 | 25.24 |
| Percent Hispanic | Percent of sample children in school whose race/ethnicity is Hispanic. Derived from HQ062. | 6.25 | 15.81 |
| Number of Parents | Coded 0 if two, 1 if one. Derived from HQ079 and HQ105. | .18 | .38 |
| Number of Siblings | Derived from HQ074, HQ075 and HQ076. | 1.98 | 1.50 |
| Mother's Educational Attainment | Coded 4 if grade 0-8, 10 if grade 9-11, 12 if a high school graduate with no further education, 14 if mother has some college, 16 if college graduate with no further education and 18 if mother has post-graduate degree. Derived from HQ106. | 11.47 | 3.30 |

Table 1 (continued)

| Variable | Description | Mean | Standard Deviation |
|---|---|---|---|
| Gender | Coded 0 if male, 1 if female. Derived from SBC004. | .49 | .50 |
| Maternal Work | Coded as 1 if no, 2 if part-time (1-35 hours per week) and 3 if full-time (more than 35 hours per week). Derived from HQ111. | 1.86 | .89 |
| Family Poverty | 1976 Orshansky poverty status. Coded 1 if poor, 0 if not poor. Derived from HQ201. | .17 | .37 |
| Poverty Concentration | Percent of sample children in school who are poor. Derived from HQ201. | 17.59 | 17.60 |
| White | Coded 1 if child is white, 0 if not. Derived from HQ162. | .77 | .42 |
| Black | Coded 1 if child is black, 0 if not. Derived from HQ162. | .14 | .33 |
| Hispanic | Coded 1 if child is Hispanic, 0 if not. Derived from HQ162. | .07 | .25 |
| Language Use | Coded 1 if child is in a household where a language other than besides English is spoken. Derived from HQ047, HQ048, HQ049, HQ050, HQ051, HQ052, and HQ053A. | .12 | .34 |
| Reading Fall | Vertical scale de-biased reading score of sample child. Derived Dervied from:<br>Year 1 = CTBS036<br>Year 2 = CTBS006<br>Year 3 = CTBS006 | 472.2253 | 93.4825 |
| grade 1 | | 347.49 | 35.15 |
| grade 2 | | 422.04 | 51.49 |
| grade 3 | | 465.91 | 56.05 |
| grade 4 | | 497.80 | 59.47 |
| grade 5 | | 533.43 | 65.91 |
| grade 6 | | 561.99 | 68.88 |

Table 1 (continued)

| Variable | | Description | Mean | Standard Deviation |
|---|---|---|---|---|
| Reading | Spring | | 512.34 | 87.64 |
| | grade 1 | | 411.49 | 50.30 |
| | grade 2 | | 466.80 | 53.76 |
| | grade 3 | | 503.17 | 59.45 |
| | grade 4 | | 528.57 | 63.77 |
| | grade 5 | | 562.86 | 68.40 |
| | grade 6 | | 591.26 | 72.62 |
| Math | Fall | Vertical scale math score of sample child. Derived from:<br>Year 1 = CTBS039<br>Year 2 = CTBS009<br>Year 3 = CTBS009 | 468.72 | 103.48 |
| | grade 1 | | 334.15 | 35.52 |
| | grade 2 | | 397.92 | 43.70 |
| | grade 3 | | 445.06 | 48.72 |
| | grade 4 | | 495.60 | 55.49 |
| | grade 5 | | 549.65 | 65.29 |
| | grade 6 | | 581.03 | 68.92 |
| Math | Spring | | 527.97 | 107.27 |
| | grade 1 | | 395.81 | 43.91 |
| | grade 2 | | 452.27 | 50.18 |
| | grade 3 | | 516.10 | 59.04 |
| | grade 4 | | 552.15 | 66.57 |
| | grade 5 | | 597.95 | 72.95 |
| | grade 6 | | 638.93 | 83.25 |

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Note: The vertical scale scores for both reading and math achievement were derived from the raw achievement scores by using the conversion tables (see Tables A-25 to A-30) provided in the report by Hemenway, Wang, Kenoyer, Hoepfner, Bear, and Smith (1978).

TABLE 2

Variable Descriptions: High School Sample

| Variable Name | Description | Mean | Standard Deviation |
|---|---|---|---|
| Family Poverty Status | Student poverty status (Census definition). Coded "1" if in poverty, "0" otherwise. Derived from BB101, BB096A, BB096B, BB096C, BB096D, BB096E, BB036B, BB036C, BB036D, BB036E, BB036G, BB036H, BB036I, BB036J. | .20 | .40 |
| Black | Coded "1" if Black, "0" otherwise. Black is derived from RACE. | .14 | .35 |
| Hispanic | Coded "1" if Hispanic or Spanish, "0" otherwise. HISPANIC is derived from RACE. | .18 | .38 |
| Number of Parents | Coded "1" if mother or stepmother is present and father or stepfather absent; "0" if 2 "parents" present. Derived from BB036B, BB036C, BB036D, BB036E. | .17 | .37 |
| Maternal Work During High School | Coded "1" if full or part-time work, "0" otherwise. Derived from BB037A. | .72 | .45 |
| Maternal Work During Elementary School | Coded "1" if full or part-time work, "0" otherwise. Derived from BB037B. | .63 | .48 |
| Maternal Work Before Elementary School | Coded "1" if full or part-time work, "0" otherwise. Derived from BB037C. | .46 | .50 |
| Number of Siblings | Coded as actual number of sibs. Adjusted sum of BB096A, BB096B, BB096C, BB096D, BB096E. | 3.07 | 2.36 |
| Gender | Student gender. Coded "1" if female, "0" if male. | .53 | .50 |

Table 2 (continued)

| Variable Name | Description | Mean | Standard Deviation |
|---|---|---|---|
| Mother's Educational Attainment | Coded as 2 = less than high school; 3 = high school graduation only; 4 = vocational, trade, or business school (less than 2 years); 5 = vocational, trade, or business school (more than 2 years); 6 = less than 2 years of college; 7 = two years or more of college; 8 = completed college; 9 = masters degree; and 10 = Ph.D., M.D., or other professional degree. | 4.17 | 2.27 |
| Language Use | Non-English language spoken at home, early in life, etc. Coded "1" if yes, "0" otherwise. | .20 | .40 |
| Physical Conflicts Among Students | The degree to which physical conflicts among students is a problem in the high school. Coded "1" if "not at all", "2" if "minor", "3" if "moderate", and "4" if "serious". Derived from SB056G. | 1.91 | .53 |
| Conflicts Between Students and Teachers | The degree to which conflicts between students and teachers is a problem in the high school. Coded like SB056G. Derived from SB056H. | 1.85 | .51 |
| Robbery or Theft | The degree to which robbery or theft is a problem in the high school. Coded like SB056G. Derived from SB056I. | 2.22 | .59 |
| Student Absenteeism | The degree to which student absenteeism is a problem in the high school. Coded like SB056G. Derived from SB056A. | 2.77 | .77 |
| Cutting Classes | The degree to which students cutting class is a problem in the high school. Coded like SB056G. Derived from SB056B. | 2.57 | .79 |
| Participation in Title I | Whether a school participated in the Title I program. Coded 1 if yes, 0 if no. | .58 | .49 |

Table 2 (continued)

| Variable Name | Description | Mean | Standard Deviation |
|---|---|---|---|
| School Poverty Concentration | Percent of school's student body in poverty. Estimate is a weighted average of sophomore and senior samples. Derived from family poverty status. | 21.25 | 15.11 |
| Sophomore Reading Achievement--Baseline | Base year reading formula score. Derived from YBREADFS. | 6.70 | 4.81 |
| Sophomore Reading Achievement--Follow-Up | Follow-up year reading formula score. Derived from FYREADFS. | 7.73 | 5.10 |
| Sophomore Math Achievement--Baseline | Baseline year sum of parts 1 and 2 math formula score. Derived from YBMTH1FS AND YBMTH2FS. | 13.97 | 10.83 |
| Sophomore Math Achievement--Follow-Up | Follow-up year sum of parts 1 and 2 math formula score. Derived from FYMTH1FS and FYMTH2FS. | 12.32 | 9.74 |

## TABLE 3

### Selected Characteristics of Low, Medium, and High Poverty Concentration Elementary Schools

| Variable | Poverty Concentration |  |  |  |  |
|---|---|---|---|---|---|
|  | Low | Medium | High | Eta$^{2}$[a] | F[b] |
| Extent of Vandalism | 1.86 | 2.08 | 2.16 | .03 | 3.63 |
| Extent of Physical Violence | 1.68 | 2.04 | 2.10 | .07 | 8.71 |
| Title I School | 44.07 | 66.94 | 80.65 | .08 | 9.72 |
| Other CE School | 37.29 | 22.31 | 11.29 | .05 | 6.01 |
| No CE School | 18.64 | 10.74 | 8.06 | .01 | 1.78 |
| Percent Title 1 Reading | 6.68 | 13.55 | 22.38 | .11 | 14.88 |
| Percent OCE Reading/T1 School | 1.67 | 4.65 | 8.45 | .03 | 3.65 |
| Percent Title 1 Math | 1.87 | 6.90 | 14.62 | .09 | 14.42 |
| Percent OCE Math/T1 School | 1.08 | 5.28 | 6.38 | .02 | 1.99 |
| Percent Meeting T1 Criteria | 5.56 | 11.00 | 25.95 | .12 | 16.95 |
| Percent Free/Reduced Lunch Criteria | 10.64 | 22.09 | 51.82 | .33 | 59.65 |
| Percent White | 94.57 | 82.26 | 52.50 | .27 | 43.48 |
| Percent Black | 2.99 | 9.42 | 31.74 | .19 | 28.01 |
| Percent Hispanic | 1.17 | 6.00 | 11.56 | .05 | 6.88 |
| Percent Language Other than English | 5.81 | 10.88 | 19.37 | .08 | 10.10 |
| Student Mobility Rate | 13.92 | 21.57 | 23.04 | .03 | 3.91 |
| Mean Reading Achievement (Fall) |  |  |  |  |  |
| grade=1 | 353.93 | 347.19 | 339.17 | .10 | 11.51 |
| grade=2 | 445.55 | 422.62 | 397.88 | .32 | 48.97 |
| grade=3 | 490.62 | 463.40 | 442.01 | .33 | 52.27 |
| grade=4 | 527.14 | 497.41 | 470.61 | .28 | 41.26 |
| grade=5 | 561.31 | 533.16 | 506.25 | .26 | 34.94 |
| grade=6 | 577.07 | 558.50 | 524.80 | .26 | 32.80 |

Table 3 (continued)

| Variable | Poverty Concentration | | | | |
|---|---|---|---|---|---|
| | Low | Medium | High | Eta$^2$ | F |
| Mean Reading Achievement (Spring) | | | | | |
| grade=1 | 425.81 | 413.04 | 391.55 | .18 | 22.76 |
| grade=2 | 491.50 | 465.96 | 445.77 | .29 | 41.88 |
| grade=3 | 530.45 | 501.01 | 475.24 | .35 | 56.38 |
| grade=4 | 557.70 | 528.65 | 496.03 | .31 | 47.20 |
| grade=5 | 588.92 | 563.70 | 534.20 | .24 | 31.33 |
| grade=6 | 605.48 | 589.74 | 554.45 | .22 | 26.99 |
| Mean Math Achievement (Fall) | | | | | |
| grade=1 | 348.93 | 334.12 | 321.66 | .24 | 34.07 |
| grade=2 | 414.95 | 398.63 | 381.06 | .25 | 34.94 |
| grade=3 | 463.52 | 440.85 | 428.67 | .24 | 33.81 |
| grade=4 | 524.17 | 494.95 | 474.98 | .28 | 40.83 |
| grade=5 | 571.75 | 546.11 | 530.70 | .18 | 22.43 |
| grade=6 | 590.97 | 576.37 | 553.03 | .13 | 14.55 |
| Mean Math Achievement (Spring) | | | | | |
| grade=1 | 413.49 | 397.76 | 378.94 | .25 | 35.76 |
| grade=2 | 478.92 | 451.15 | 436.81 | .23 | 31.48 |
| grade=3 | 541.20 | 511.74 | 499.06 | .23 | 31.09 |
| grade=4 | 579.23 | 550.99 | 527.97 | .22 | 28.71 |
| grade=5 | 624.14 | 592.93 | 576.26 | .18 | 22.28 |
| grade=6 | 657.24 | 633.19 | 601.51 | .15 | 16.05 |

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a/ Eta$^2$ refers to the proportion of variation in a school characteristic accounted for by knowing if a school has low, medium, or high poverty concentration.

b/ F refers to the F statistic associated with a test of the null hypothesis that one or more of the group means differ from one another.

## TABLE 4

### Characteristics of Low, Medium, and High Poverty Concentration High Schools

| Variable | Poverty Concentration<br>Low | <br>Medium | <br>High | Eta$^{2}$[a/] | F[b/] |
|---|---|---|---|---|---|
| Physical Conflicts Among Students | 1.78 | 1.88 | 2.09 | .04 | 21.82 |
| Conflicts between Students and Teachers | 1.74 | 1.85 | 1.97 | .02 | 11.80 |
| Robbery or Theft | 2.14 | 2.20 | 2.33 | .01 | 6.75 |
| Student Absenteeism | 2.50 | 2.77 | 3.04 | .06 | 30.95 |
| Cutting Classes | 2.44 | 2.55 | 2.76 | .02 | 10.33 |
| School Participates in ESEA Title I | 42.47 | 50.79 | 73.01 | .05 | 22.35 |
| Percent of 10th Grade Students Taking Remedial Reading | 7.74 | 10.86 | 21.59 | .12 | 53.41 |
| Percent of 10th Grade Students Taking Remedial Math | 7.79 | 11.96 | 22.35 | .10 | 40.58 |
| Percent of Students White | 80.63 | 71.20 | 31.98 | .36 | 278.85 |
| Percent of Students Blacks | 5.16 | 10.33 | 28.94 | .17 | 103.85 |
| Percent of Students Hispanic | 9.51 | 14.58 | 28.85 | .17 | 102.22 |
| Percent of Students Speaking Language Other than English | 5.55 | 6.40 | 20.30 | .10 | 50.56 |
| Sophomore Math Achievement | 16.02 | 12.30 | 7.65 | .37 | 266.95 |
| Senior Math Achievement | 17.62 | 14.79 | 10.73 | .37 | 267.07 |
| Sophomore Reading Achievement | 8.12 | 6.69 | 4.69 | .35 | 247.78 |
| Senior Reading Achievement | 9.99 | 8.60 | 6.09 | .37 | 265.08 |
| Percent of Students Who Dropout | 5.66 | 9.03 | 15.36 | .12 | 64.24 |

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[a/] Eta$^{2}$ refers to the proportion of variation in a school characteristic accounted for by knowing if a school has low, medium, or high poverty concentration.

[b/] F refers to the F statistic associated with a test of the null hypothesis that one or more of the group means differ from one another.

## TABLE 5

### Regression Coefficients for Gross and Net Effects of School Poverty Concentration on Students Achievement and Learning by Grade Level for Elementary School Aged Students

| | | Gross Effect | Net Effect |
|---|---|---|---|
| Grade 1 | | | |
| Reading Achievement | Fall | -.27** | -.10 |
| | Spring | -.72** | -.21** |
| Learning | | -.45** | -.11 |
| Math Achievement | Fall | -.45** | -.21** |
| | Spring | -.59** | -.14* |
| Learning | | -.14* | .07 |
| Grade 2 | | | |
| Reading Achievement | Fall | -.95** | -.43** |
| | Spring | -.84** | -.34** |
| Learning | | .09 | .10 |
| Math Achievement | Fall | -.64** | -.26** |
| | Spring | -.76** | -.24* |
| Learning | | -.12 | .02 |
| Grade 3 | | | |
| Reading Achievement | Fall | -1.04** | -.35** |
| | Spring | -1.21** | -.39** |
| Learning | | -.17 | -.04 |
| Math Achievement | Fall | -.81** | -.22** |
| | Spring | -.92** | -.15* |
| Learning | | -.11 | .07 |
| Grade 4 | | | |
| Reading Achievement | Fall | -1.21** | -.46** |
| | Spring | -1.27** | -.40** |
| Learning | | -.06 | .06 |
| Math Achievement | Fall | -.92** | -.40** |
| | Spring | -.94** | -.17 |
| Learning | | -.02 | .23 |

Table 5 (continued)

| | | Gross Effect | Net Effect |
|---|---|---|---|
| Grade 5 | | | |
| Reading Achievement | Fall | -1.28** | -.44** |
| | Spring | -1.22** | -.36** |
| Learning | | .06 | .08 |
| Math Achievement | Fall | -.95** | -.22* |
| | Spring | -.99* | -.27** |
| Learning | | -.04 | -.05 |
| Grade 6 | | | |
| Reading Achievement | Fall | -1.29** | -.38** |
| | Spring | -1.35** | -.36* |
| Learning | | -.06 | .02 |
| Math Achievement | Fall | -1.11** | -.32** |
| | Spring | -1.32** | -.45** |
| Learning | | -.21 | -.13 |

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* $p < .05$.
** $p < .01$.

### TABLE 6

### Regression Coefficients for Group Effects by Grade: Elementary School Aged Students

| Variable | Grade 1 | | | | Grade 2 | | | | Grade 3 | | | | Grade 4 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Reading | | Math | | Reading | | Math | | Reading | | Math | | Reading | | Math | |
| | b[a] | t[b] | b | t | b | t | b | t | b | t | b | t | b | t | b | t |
| Time | 72.04 | 40.39 | 63.73 | 38.89 | 42.06 | 19.15 | 55.91 | 28.35 | 39.22 | 16.80 | 72.21 | 32.37 | 30.40 | 11.55 | 55.47 | 20.56 |
| Poverty Concentration | -.27 | -5.63 | -.45 | -9.99 | -.95 | 15.71 | -.64 | 11.72 | -1.04 | -16.19 | -.81 | -13.20 | -1.21 | -16.07 | -.92 | -11.87 |
| Poverty Concentration x Time | -.45 | -6.58 | -.14 | 2.24 | .09 | 1.00 | -.12 | -1.57 | -.17 | -1.82 | -.11 | -1.23 | -.06 | -.61 | -.02 | -.18 |
| Constant | 353.10 | 279.97 | 343.20 | 296.17 | 440.66 | 286.70 | 410.37 | 294.30 | 485.69 | 294.16 | 460.51 | 291.93 | 520.92 | 279.92 | 513.35 | 269.06 |
| R-square | .39 | | .41 | | .21 | | .30 | | .21 | | .36 | | .17 | | .21 | |
| N | 4,616 | | 4,616 | | 4,228 | | 4,228 | | 4,178 | | 4,178 | | 3,946 | | 3,946 | |

| Variable | Grade 5 | | | | Grade 6 | | | |
|---|---|---|---|---|---|---|---|---|
| | Reading | | Math | | Reading | | Math | |
| | b | t | b | t | b | t | b | t |
| Time | 27.70 | 10.06 | 48.11 | 16.49 | 29.55 | 11.58 | 59.84 | 21.42 |
| Poverty Concentration | -1.28 | -16.32 | -.95 | -11.40 | -1.29 | -14.75 | -1.11 | -11.58 |
| Poverty Concentration x Time | .06 | .50 | -.04 | -.34 | -.06 | -.44 | -.21 | -1.54 |
| Constant | 556.75 | 285.99 | 567.20 | 274.97 | 581.10 | 322.05 | 597.95 | 302.77 |
| R-square | .15 | | .16 | | .12 | | .17 | |
| N | 4,222 | | 4,222 | | 5,334 | | 5,334 | |

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a/ b corresponds to the estimated regression parameters.
b/ t corresponds to the t-statistic for the estimated regression parameters.

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TABLE 7

Regression Coefficients for Net Effects Model by Grade: Elementary School Age Students

| | Grade 1 | | | | Grade 2 | | | | Grade 3 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Reading | | Math | | Reading | | Math | | Reading | | Math | |
| Variable Name | $b^{a/}$ | $t^{b/}$ | b | t | b | t | b | t | b | t | b | t |
| Time | 35.58 | 5.17 | 51.20 | 7.98 | 44.08 | 5.55 | 42.06 | 5.67 | 37.79 | 6.31 | 57.64 | 6.80 |
| Gender | 6.06 | 3.51 | .66 | .41 | 13.11 | 6.38 | 1.28 | .67 | 10.26 | 6.56 | 4.06 | 1.87 |
| Black | -4.91 | -1.68 | -12.13 | -6.46 | -13.97 | -3.82 | -16.46 | -4.82 | -26.91 | -6.86 | -24.61 | -6.49 |
| Hispanic | -6.96 | -1.50 | -10.26 | -2.37 | -9.76 | -1.81 | -14.76 | -2.95 | -27.27 | -4.35 | -19.16 | -3.16 |
| Maternal Work | -3.31 | -3.26 | -1.90 | -1.99 | -3.62 | -2.98 | -2.79 | -2.46 | -4.45 | -3.36 | -3.62 | -2.83 |
| Number of Siblings | -1.22 | -1.90 | .21 | -.35 | -3.06 | -4.09 | -.42 | -.60 | -1.10 | -1.33 | -1.20 | -1.50 |
| Number of Parents | -3.60 | -1.22 | 2.91 | 1.13 | -3.69 | -1.03 | -1.38 | -.44 | -6.95 | -2.03 | -11.43 | -3.44 |
| Mother's Educational Attainment | 1.33 | 4.28 | 1.38 | 4.78 | 4.64 | 12.96 | 2.48 | 7.39 | 4.30 | 10.80 | 2.92 | 7.80 |
| Family Poverty Status | -2.23 | -.76 | -6.75 | -2.61 | -7.03 | -1.97 | -8.08 | -2.42 | -7.11 | -1.83 | -5.06 | -1.16 |
| Language Other than English | -1.59 | -.67 | .39 | .12 | -.45 | -.115 | 3.97 | 1.07 | 8.28 | 1.81 | 6.71 | 1.06 |
| Poverty Concentration | .10 | -1.65 | -.21 | -3.55 | -.43 | -5.90 | -.26 | -3.83 | -.35 | -4.36 | -.22 | -2.86 |
| Gender x Time | 3.07 | 1.26 | -.51 | -.23 | .06 | .02 | 4.12 | 1.52 | -1.51 | -.67 | 4.60 | 1.41 |
| Black x Time | -7.57 | -1.83 | -6.56 | -1.70 | -.60 | -.08 | 1.22 | .25 | -7.09 | -1.28 | -9.67 | -1.80 |
| Hispanic x Time | -6.69 | -.99 | -1.85 | -.30 | -1.71 | -.225 | 13.96 | 1.97 | -.20 | -.02 | 6.82 | .56 |
| Maternal Work x Time | -.06 | -.03 | -1.61 | -1.05 | .33 | .19 | -1.13 | -.70 | .41 | .22 | -.27 | -.15 |
| Number of Siblings x Time | -.58 | -.64 | -.24 | -.28 | -.68 | -.65 | -1.16 | -1.10 | -1.32 | -1.13 | -.58 | -.52 |
| Number of Parents x Time | -2.68 | -.68 | -6.16 | -1.60 | .21 | .05 | -5.67 | -1.27 | 1.39 | .29 | 3.59 | .77 |
| Mother's Educational Attainment x Time | 2.86 | 6.52 | 1.30 | 3.19 | -.16 | -.31 | 1.25 | 2.65 | .29 | .52 | 1.10 | 2.02 |
| Family Poverty Status x Time | -8.27 | -1.95 | -1.21 | -.31 | 1.67 | .29 | -2.22 | -.47 | -.22 | -.06 | -2.99 | -.56 |
| Language Other than English x Time | 2.00 | .42 | -3.38 | -.75 | 3.63 | .61 | -6.63 | -1.22 | -4.58 | -.71 | -7.03 | -1.12 |
| Poverty Concentration x Time | -.11 | -1.22 | .07 | .83 | .10 | .92 | .02 | .17 | -.06 | -.38 | .07 | .63 |
| Constant | 341.93 | 70.32 | 329.06 | 75.57 | 387.66 | 69.06 | 384.42 | 73.36 | 430.14 | 70.39 | 430.50 | 71.87 |
| R-square | .45 | | .45 | | .38 | | .36 | | .32 | | .43 | |
| N | 6,356 | | 6,356 | | 4,066 | | 4,066 | | 3,962 | | 3,962 | |

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Table 7 (continued)

| Variable Name | Grade 4 | | | | Grade 5 | | | | Grade 6 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Reading | | Math | | Reading | | Math | | Reading | | Math | |
| | b[a/] | t[b/] | b | t | b | t | b | t | b | t | b | t |
| Time | 22.96 | 2.44 | 12.69 | 3.29 | 19.11 | 1.95 | 48.92 | 4.58 | 20.31 | 2.18 | 38.41 | 3.68 |
| Gender | 9.10 | 3.66 | 8.92 | 3.39 | 6.44 | 2.47 | 15.35 | 5.41 | 15.06 | 6.01 | 13.75 | 4.89 |
| Black | -26.00 | -6.24 | -19.95 | -4.53 | -37.50 | -8.53 | -30.23 | -6.32 | -28.07 | -6.00 | -22.91 | -4.37 |
| Hispanic | -24.57 | -3.90 | -12.97 | -1.95 | -22.08 | -3.05 | -18.58 | -2.35 | -1.89 | -.25 | -4.86 | -.57 |
| Maternal Work | -1.96 | -1.36 | .01 | .01 | -5.05 | -3.35 | -3.83 | -2.34 | -4.65 | -3.16 | -4.98 | -3.03 |
| Number of Siblings | -1.96 | -2.16 | -.15 | -.16 | -4.83 | -5.34 | -1.13 | -1.15 | -5.39 | -6.03 | -1.54 | -1.53 |
| Number of Parents | -6.58 | -1.72 | -1.32 | -.33 | -7.15 | -1.79 | -6.62 | -1.53 | -8.03 | -1.99 | -8.24 | -1.82 |
| Mother's Educational Attainment | 4.33 | 10.19 | 2.96 | 6.60 | 5.31 | 12.08 | 5.30 | 11.09 | 6.44 | 14.79 | 5.58 | 11.42 |
| Family Poverty Status | -6.38 | -1.54 | -6.51 | -1.49 | -3.31 | -.73 | -6.71 | -1.36 | -10.60 | -2.35 | -18.31 | -3.62 |
| Language Other than English | -1.50 | -.32 | .39 | .08 | 3.37 | .62 | 10.24 | 1.74 | -1.24 | -.23 | 10.73 | 1.77 |
| Poverty Concentration | -.46 | -4.99 | -.40 | -4.16 | -.44 | -4.58 | -.22 | -2.10 | -.38 | -3.69 | -.32 | -2.77 |
| Gender x Time | 3.92 | 1.11 | 7.78 | 2.09 | .77 | .21 | -.31 | -.08 | .62 | .18 | 9.83 | 2.47 |
| Black x Time | -2.05 | -.35 | -7.86 | -1.26 | .07 | .01 | .94 | .14 | -4.61 | -.70 | -2.03 | -.27 |
| Hispanic x Time | 1.01 | .11 | -6.89 | -.73 | 1.42 | .14 | .05 | .01 | 5.77 | .53 | 10.90 | .90 |
| Maternal Work x Time | -.70 | -.35 | .03 | .015 | .25 | .12 | -1.70 | -.73 | -1.82 | -.88 | .09 | .06 |
| Number of Siblings x Time | -2.17 | -1.69 | -.56 | -.41 | .05 | .04 | -1.11 | -.80 | -.18 | -.14 | -.68 | -.48 |
| Number of Parents x Time | -.75 | -.14 | -5.17 | .91 | -.85 | -.15 | -3.33 | -.54 | 5.17 | .91 | 5.06 | .79 |
| Mother's Educational Attainment x Time | .84 | 1.40 | 1.57 | 2.48 | .62 | 1.00 | .43 | .63 | .97 | 1.57 | 1.40 | 2.02 |
| Family Poverty Status x Time | -.20 | -.03 | -.41 | -.07 | -.17 | .03 | 3.54 | .51 | -2.43 | -.38 | -1.65 | -.23 |
| Language Other than English x Time | .09 | .01 | 4.52 | .65 | 1.32 | .17 | 3.38 | .41 | 3.06 | .40 | -2.35 | -.27 |
| Poverty Concentration x Time | .06 | .48 | .23 | 1.69 | .08 | .56 | -.05 | -.38 | .02 | .16 | -.13 | -.81 |
| Constant | 469.32 | 70.46 | 471.19 | 67.00 | 505.96 | 72.90 | 502.07 | 66.44 | 513.17 | 77.88 | 535.12 | 72.44 |
| R-square | .28 | | .29 | | .28 | | .26 | | .26 | | .26 | |
| N | 3,742 | | 3,742 | | 3,994 | | 3,994 | | 4,954 | | 4,954 | |

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a/ b corresponds to the estimated regression coefficients.

b/ t corresponds to the t-statistic of the estimated regression coefficient.

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## TABLE 8

### Regression Coefficients for Gross and Net Effects of School Poverty Concentration on Achievement and Learning: Three Year Data

| | Effect on Baseline Achievement | Effect on Learning |
|---|---|---|
| **Grade 1** | | |
| Gross | | |
| Reading | -.38** | -.03** |
| Math | -.40** | -.61a/ |
| Net | | |
| Reading | -.17 | -.02**a/ |
| Math | -.18* | -.04a/ |
| **Grade 2** | | |
| Gross | | |
| Reading | -.72** | -.01** |
| Math | -.41** | -.02** |
| Net | | |
| Reading | -.31** | -.80a/ |
| Math | -.03 | -.02**a/ |
| **Grade 3** | | |
| Gross | | |
| Reading | -.99** | -.02** |
| Math | -.74** | -.01* |
| Net | | |
| Reading | -.39** | -.66a/ |
| Math | -.08 | -.01a/ |
| **Grade 4** | | |
| Gross | | |
| Reading | -.98** | -.56a/ |
| Math | -.74** | -.02a/ |
| Net | | |
| Reading | -.39* | .61a/ |
| Math | -.27 | .21a/ |

---

* p .05.
** p .01.

a/ Parameter estimate multiplied by 100.

## TABLE 9

### Regression Coefficients for Gross Effects for Elementary School Aged Students by Grade Cohort: Achievement Measured at Six Points in Time

| Variables | Grade Cohort 1 | | | | Grade Cohort 2 | | | | Grade Cohort 3 | | | | Grade Cohort 4 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Reading | | Math | | Reading | | Math | | Reading | | Math | | Reading | | Math | |
| | b[a] | t[b] | b | t | b | t | b | t | b | t | b | t | b | t | b | t |
| Time | 5.50 | 51.65 | 5.50 | 54.58 | 3.92 | 32.98 | 5.20 | 45.15 | 3.35 | 25.18 | 4.85 | 35.63 | 3.05 | 17.89 | 4.10 | 23.11 |
| Poverty Concentration | -0.38 | -5.25 | -0.40 | -5.89 | -.72 | -8.61 | -.41 | -5.03 | -.99 | -10.94 | -.74 | -8.00 | -.98 | -7.17 | -.74 | -5.22 |
| Poverty Concentration x Time | -0.03 | -7.38 | -.61[c] | -1.66 | -.01 | -3.27 | -.02 | -3.44 | -.02 | -3.12 | -.01 | -2.36 | -.56[c] | -.76 | -.02[c] | .03 |
| Constant | 371.24 | 186.77 | 355.29 | 188.86 | 447.11 | 201.33 | 414.97 | 193.16 | 493.92 | 199.0 | 477.11 | 187.87 | 523.49 | 164.50 | 525.97 | 158.76 |
| R-Square | .56 | | .61 | | .39 | | .51 | | .32 | | .42 | | .24 | | .32 | |
| N | 3,708 | | 3,708 | | 3,606 | | 3,606 | | 3,432 | | 3,432 | | 2,520 | | 2,520 | |

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[a] b corresponds to the estimated regression coefficient.
[b] t corresponds to the t-statistic of the estimated regression coefficient.
[c] Parameter estimate multiplied by 100.

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## TABLE 10

### Regression Coefficients for Net Effects for Elementary School Aged Students by Grade Cohort: Achievement Measured of Six Points in Time

| | Grade Cohort 1 | | | | Grade Cohort 2 | | | | Grade Cohort 3 | | | | Grade Cohort 4 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Reading | | Math | | Reading | | Math | | Reading | | Math | | Reading | | Math | |
| | b[a] | t[b] | b | t | b | t | b | t | b | t | b | t | b | t | b | t |
| Time | 4.94 | 12.34 | 4.77 | 12.08 | 3.62 | 8.06 | 4.24 | 9.30 | 3.11 | 6.26 | 3.76 | 7.22 | 2.07 | 3.33 | 2.71 | 4.07 |
| Gender | 7.42 | 2.79 | -1.95 | -.74 | 13.76 | 4.70 | 2.26 | .80 | 13.37 | 3.96 | 3.34 | .95 | 16.09 | 3.76 | 9.54 | 2.08 |
| Black | -4.81 | -1.04 | -13.43 | -2.94 | -10.13 | -1.98 | -14.15 | -2.73 | -25.47 | -4.52 | -23.30 | -4.0 | -20.7 | -2.89 | -18.03 | -2.35 |
| Hispanic | -8.21 | -1.25 | -13.08 | -1.93 | -12.80 | -1.82 | -20.14 | -2.82 | -29.55 | -3.16 | -6.29 | -.64 | -26.5 | -2.68 | -35.18 | -3.32 |
| Maternal Work | -1.31 | -.83 | -.75 | -.48 | -.10 | -.06 | -.60 | -.33 | -2.44 | -1.24 | -1.53 | -.74 | -.103 | -.04 | .53 | .21 |
| Number of Siblings | -2.01 | -2.05 | -.45 | -.47 | -2.01 | -1.98 | .54 | .53 | -1.03 | -.84 | -2.06 | -1.60 | -1.075 | -.71 | .55 | .33 |
| Number of Parents | -2.91 | -.63 | -1.60 | -.36 | .33 | .06 | .37 | .07 | -6.90 | -1.32 | -14.72 | -2.68 | -18.39 | -2.5 | -17.41 | -2.20 |
| Mother's Educational Attainment | 1.97 | 4.03 | 1.61 | 3.32 | 4.75 | 8.81 | 2.32 | 4.23 | 4.30 | 7.37 | 2.72 | 4.45 | 4.29 | 5.72 | 3.45 | 4.30 |
| Family Poverty Status | -.67 | -.13 | 3.02 | .60 | -8.30 | -1.69 | -14.86 | -2.97 | -2.34 | -.39 | -13.02 | -2.06 | -6.50 | -.85 | -.25 | -.03 |
| Language Other than English | -3.82 | -.73 | -3.45 | -.67 | 1.78 | .34 | 1.80 | .33 | .86 | .13 | -5.88 | -.77 | -11.81 | -1.45 | -11.73 | -1.35 |
| Poverty Concentration | -.17 | -1.91 | -.18 | -2.00 | -.31 | -3.00 | -.03 | -.25 | -.39 | -3.39 | -.08 | -.69 | -.39 | -2.52 | -.27 | -1.63 |
| Gender x Time | .26 | 1.80 | .37 | 2.60 | .17 | 1.11 | .60 | 3.77 | -.21 | -1.16 | .38 | 2.02 | -.01 | -.06 | .44 | 1.78 |
| Black x Time | .41 | -1.65 | -.07 | -.30 | -.59 | -2.16 | -.31 | -1.12 | -.16 | -.54 | .09 | .31 | -.28 | -.73 | .48 | 1.18 |
| Hispanic x Time | -1.06 | -2.89 | .08 | .21 | -.21[c] | -.01 | .29 | .77 | .45 | .89 | .42 | .80 | -.21 | -.39 | .57 | 1.00 |
| Maternal Work x Time | .94[c] | .11 | .06 | .73 | -.06 | -.63 | -.71[c] | -.07 | -.03 | -.26 | -.11 | -1.00 | -.32[c] | -.03 | .05 | .39 |
| Number of Siblings x Time | -.10 | -1.98 | -.03 | -.51 | -.02 | -.44 | -.01 | -.20 | -.02 | -.24 | .06 | .88 | -.07 | -.82 | .024 | .28 |
| Number of Parents x Time | -.07 | -.30 | -.18 | -.73 | -.32 | -1.18 | .30 | 1.09 | -.21 | -.75 | .27 | .92 | .44 | 1.12 | -.21 | -.49 |
| Mother's Educational Attainment x Time | .05 | 1.81 | .04 | 1.46 | .03 | .89 | .06 | 1.92 | .03 | 1.02 | .08 | 2.29 | .09 | 2.13 | .08 | 1.86 |
| Family Poverty Status x Time | -.19 | .70 | -.23 | -.87 | .23 | .85 | .28 | 1.04 | -.28 | -.88 | -.05 | -.14 | .44 | -1.08 | -.13 | -.30 |
| Language Other than English x Time | .41 | 1.46 | .19 | .69 | .20 | .72 | -.03 | -.12 | -.08 | -.46 | .16 | .40 | .14 | .33 | -.04 | -.08 |
| Poverty Concentration x Time | -.02 | -3.72 | -.04[c] | -.07 | -.80[c] | -1.43 | -.02 | -2.81 | -.66[c] | -1.10 | -.01 | -1.70 | .61[c] | .72 | .21[c] | .23 |
| Constant | 349.13 | 47.02 | 339.00 | 45.91 | 385.00 | 46.00 | 386.0 | 45.27 | 440.4 | 48.10 | 448.39 | 46.16 | 467.0 | 40.31 | 480.0 | 39.00 |
| R-square | .62 | | .63 | | .49 | | .55 | | .42 | | .47 | | .36 | | .39 | |
| N | 3,576 | | 3,576 | | 3,456 | | 3,456 | | 3,282 | | 3,282 | | 2,388 | | 2,388 | |

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[a] b corresponds to the estimated regression coefficients.
[b] t corresponds to the t-statistic of the estimated regression coefficient.
[c] Parameter estimate multiplied by 100.

## TABLE 11

### Regression Coefficients for Gross and Net Effects of School Poverty Concentration on Achievement and Learning for High School Aged Students

| | | Gross Effect | Net Effect |
|---|---|---|---|
| Reading | Sophomore | -.10** | -.04** |
| Achievement | Senior | -.11** | -.06** |
| Learning | | -.01 | -.02 |
| Math | Sophomore | -.24** | -.12** |
| Achievement | Senior | -.27** | -.15** |
| Learning | | -.03 | -.03 |

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* $p < .05$.

** $p < .01$.

## TABLE 12

### Regression Coefficients for Gross Effects for High School Aged Students

| Variable | High School Sophomores | | | |
|---|---|---|---|---|
| | Reading | | Math | |
| | b | t | b | t |
| Time | 1.51 | 6.73 | 2.76 | 6.13 |
| Poverty Concentration | -.10 | -14.41 | -.24 | -17.06 |
| Poverty Concentration x Time | -.01 | -1.25 | -.03 | -1.64 |
| Constant | 9.69 | 60.89 | 19.09 | 59.84 |
| R-square | .09 | | .11 | |
| N | 5,750 | | 5,750 | |

## TABLE 13

### Regression Coefficients for Net Effects Model: High School Age Students

| Independent Variables | Reading b[a] | Reading t[b] | Math b | Math t |
|---|---|---|---|---|
| Time | 1.32 | 2.92 | 2.64 | 2.94 |
| Gender | -.29 | -1.68 | -1.48 | -4.40 |
| Black | -2.19 | -6.75 | -5.11 | -7.96 |
| Hispanic | -2.50 | -9.20 | -5.40 | -10.05 |
| Work During High School | -.36 | -1.67 | -.38 | -.91 |
| Work During Elementary School | .01 | .07 | -.48 | -1.15 |
| Work Before Elementary School | -.44 | -2.30 | -1.06 | -2.79 |
| Number of Siblings | -.21 | -4.95 | -.32 | -3.82 |
| Number of Parents | -.58 | -2.21 | -1.09 | -2.08 |
| Mother's Educational Attainment | .36 | 9.24 | .71 | 9.09 |
| Family Poverty Status | -.58 | -2.33 | -1.59 | -3.24 |
| Language Other than English | .58 | 2.38 | 1.34 | 2.79 |
| Poverty Concentration | -.04 | -5.87 | -.12 | -7.81 |
| Gender x Time | .09 | .38 | -.39 | -.83 |
| Black x Time | .02 | .04 | .71 | .79 |
| Hispanic x Time | .31 | .80 | .09 | .12 |
| Working Before Elementary School x Time | .00 | .02 | -.30 | -.50 |
| Working During Elementary School x Time | .03 | .09 | -.13 | -.22 |
| Working During High School x Time | -.31 | -1.14 | -.46 | -.86 |
| Number of Siblings x Time | -.01 | -.22 | -.09 | -.79 |
| Number of Parents x Time | -.16 | -.43 | .16 | .22 |
| Mother's Educational Attainment x Time | .05 | .90 | .18 | 1.67 |
| Family Poverty Status x Time | -.07 | -.20 | -.43 | -.62 |
| Language Other than English x Time | .00 | .02 | .42 | .62 |
| Poverty Concentration x Time | -.00 | .88 | -.02 | -1.06 |
| Constant | 8.86 | 27.66 | 17.87 | 28.18 |
| R-square | .18 | | .23 | |
| N | 5,750 | | 5,750 | |

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[a] b corresponds to the estimated regression coefficients.

[b] t corresponds to the t-statistic for the estimated regression coefficients.

# APPENDIX E

## Support for Chapter 3

Part 1 : Technical Notes to the Tables on Children, Education and Poverty

Prepared By: James L. Peterson and Nicholas Zill
Child Trends, Inc.

*****

Part 2 : The 1980 Census of Population and Housing School District File

Prepared By: Myron Schwartz
Decision Resources Corporation

# Technical Notes to the Tables on Children, Education and Poverty

James L. Peterson and Nicholas Zill
Child Trends, Inc.

December 1985

## Source of Data

The data on which the accompanying tables are based are from the March and October Current Population Surveys, conducted by the Bureau of the Census. The October data are from the years 1977, 1982, and 1983, while the March data are from the years 1978, 1983, and 1984.

The Current Population Survey is conducted monthly by the Bureau for the Department of Labor. Its primary purpose is the measurement of employment. An important secondary purpose is to collect data on the demographic status of the population (such as race, ethnicity, marital status, educational attainment, and family structure) and on selected topics of interest (including fertility, health, education, and income).

The survey is based on a probability household sample of the civilian non-institutional population of the United States. Approximately 71,000 housing units are in the sample each month, and interviews in about 58,000 of them are conducted, through which information on nearly 160,000 individuals is collected. Each March additional data is collected through the March Income and Demographic Supplement, an extensive questionnaire that gathers information on annual income, work experience, receipt of non-cash benefits, and migration. In most Octobers there is an Education Supplement that gathers information about progress in school for children and young adults of school age. Data from the supplements and their associated core surveys can be linked.

The principal advantage of using the Current Population Survey as a data base is that it provides basic, periodic social and demographic data on the U.S. population of all ages, including children of school age. Using reasonably comparable measures, trends in important variables can be traced. Furthermore, the March supplement provides the necessary data to define the poverty status of each family.

## Definitions of Variables

### Poverty

For the tables based on the March Current Population Surveys, the poverty measure included by the Bureau of the Census on the public use tapes is used. This measure, commonly referred to as the official government measure of poverty, is based on a definition developed by the Social Security Administration in 1964 and revised in 1969 and 1981. This measure uses a number of income cutoffs that vary according to such factors as family size, age of family head, number of children in the family, and (formerly) farm-nonfarm residence. The income cutoffs were set using the "economy food plan," the least expensive of four nutritionally adequate food plans developed by the Department of Agriculture. The income cutoffs are revised each year according to changes in the Consumer Price Index. In addition to being classified as poor or non-poor, a family's income can be compared to the cutoff for families of their type, and the extent to which their income is above or below the poverty line can be expressed as a percentage of the cutoff level.

Although the data needed to define family poverty is collected in March, the data refer to the previous calendar year. Thus the poverty status reported for March 1984, for example, acutally refers to the calendar year 1983.

The poverty rates reported in these tables may be slightly higher than comparable rates published by the Bureau of the Census. This is because published reports combine the income of families and related subfamilies and assume that all individuals in a family and its related subfamilies share in this common income. In contrast, the poverty measure provided on the public use tape does not combine families and related subfamilies, but assigns poverty status on the basis of family or subfamily income alone. When considered alone, nearly half of subfamilies are classified as poor. Thus using the measure that treats families and subfamilies separately results in slightly higher poverty rates for children. For example, the poverty rate for related children aged 6 to 17 is 20.2 percent according to the Bureau's publications, but is 21.0 percent by the measure we use here. This difference is not likely to have any significant effect on the cross-group comparisons that are the subject of these tables.

The detailed family income information needed to define poverty status precisely is not collected in October. Instead, only a single item about family income is asked and the response is recorded in broad categories. Fortunately, the categories are narrower at the lower end of the income scale. It is possible, therefore, to construct an approximate poverty measure using the income data and the data on family size, number of children, etc., along with the matrix of income cutoffs that define poverty. The tables based on the October Current Population Survey use this approach. In comparison with the March poverty measure, the October measure is subject to two main errors: 1) Because income is reported in broad categories, each category must be assigned a poverty status, depending on family type. This includes the category in which the income cutoff level is embedded. For this category, therefore, some families will be incorrectly classified as poor, or non-poor, depending on the family's true income and the status to which the category is assigned. 2) The use of a single item to measure income, even in broad categories, is prone to error. On balance, the error is likely to be biased downward, because respondents, when not specifically reminded, are apt to forget about some sources of income. Despite these errors, the poverty measure for October tracks reasonably well with that for March. It tends to be slightly higher, consistent with the supposition that income might be somewhat underreported using the single-item measure.

## Race/Ethnicity

Race is defined using responses to two items from the Current Population Survey, one on race, the other on origin or descent. "Hispanic" refers to those whose origin or descent is Mexican American, Chicano, Mexican, Puerto Rican, Cuban, Central or South American or Other Spanish, regardless of race. "Black" refers to those whose race is black but whose origin or descent is not Hispanic. Similarly, "white" refers to non-Hispanic whites; and "other races, to non-Hispanics of a race other than white or black. Both the "white" and "black" categories in these tabulations refer to a more restricted population that the corresponding categories in publications and tabulations sponsored by the U.S. Bureau of the Census, as the Bureau's categories include Hispanics who identify themselves as "white" or "black," respectively.

## Enrollment

In the October surveys, the current school enrollment status of all school-aged children (age 3 and up) is determined. For March, on the other hand, current enrollment is specifically asked only of those children who are 16 or older. For those 14 and 15, a proxy measure of enrollment may be obtained from an item about the respondent's activity during the previous week. One of the possible responses is "going to school." What is unclear about this measure is how a respondent who is both going to school and engaged in some other activity, such as working, will answer this question. Our assumption is that for most of those of this age who are attending school, school will be their main activity, and they will indicate "school" in response to this question. The gross error in using this measure is not too great, based on comparisons with data from October. Thus 94 to 96 percent of 14 to 15 year olds are enrolled according to the March data. In contrast, 99 percent of 12 to 15 year olds are enrolled in October. Some of this 3 to 4 percentage point drop may be attributed to dropouts between October and March and to the broader age span to which the October percentage applies. But most is likely to be measurement error introduced by using the proxy measure.

No information about enrollment is collected for those under 14 in March. However, the October data indicate that the enrollment rates of those aged 5 to 13 are consistently near 99 percent. Thus little error is introduced by assuming all are enrolled.

The enrollment rates for 16 and 17 year olds differ between October and March: the March rates are 5 to 7 percentage points lower. The March question is restricted to enrollment or attendance at a high school college, or university, whereas the October question leaves the kind of school undefined and therefore could include vocational or other special schools. This difference in question wording could account for some of the difference. Also, and especially for this age group, dropping out of school between fall and spring may also account for some of the difference.

In many comparisons, the enrollment rates of blacks exceed those of whites. These differences should be interpreted with some caution. The sample coverage of black males was considerably lower than that of white males, especially for those in their upper teens. Because those not found in the sample are also more likely to be out of school, the enrollment rates of blacks may be more prone to an upward bias than are the rates for whites.

## Family Structure

Using the detailed relationship data available to it on the March data files, the Bureau of the Census constructed a recoded variable for each child indicating the presence of the child's mother and father (by birth or adoption). This variable is used as the family structure variable for the March tables and comprises four categories: both parents, mother only, father only, and neither parent. Children in the latter category are living with another relative (such as a grandparent); children living on their own or in group quarters are excluded from the definition of this variable.

The data available in the public use tapes for October do not contain this variable nor do they contain the necessary data to construct it in exactly the same fashion. However, a close approximation may be made by using information on the child's relationship to the householder, and the relationship of other household members to the householder. Using this information it is possible to determine if the child is living with the mother and/or father as long as the mother or father is the householder. This will be the case for most children. However, a child may live with a mother and/or father in a subfamily, in which case neither parent is the householder. For such children, it is not possible to determine which, if any, parent is present. For October, therefore, we can unequivocally determine for most children that both parents, or the mother only, or the father only is present; but we can never be sure of the fourth category -- neither parent -- for in some cases one or the other parent may be present but not be a householder. Consequently, only data on the first three categories are presented. Because parents who are not householders (or spouses of householders) are excluded, the numbers in these three categories will be slightly understated. If any bias operates in these errors, it is likely to be in a greater understatement of children in mother only families, since such are more likely than the other family arrangements to be in a subfamily.

## Family Size

The only measure of family size on the file is the number of children under 18 living in the household. This measure differs from a count of the child respondent plus his or her siblings in two respects: 1) it excludes siblings 18 or over and those not living in the household; 2) it includes children under 18 who are not siblings as long as they live in the household. The first difference affects mainly older children, making their families appear to be a bit smaller than they actually are. The second difference is likely to be small and not subject to any strong biases.

## Maternal Employment

For the March tables, maternal employment is a measure of the employment pattern in the calendar year prior to the survey. Thus, the pattern reported from the March 1984, data refers to 1983. Full-time refers to 30 hours per week or more; full-year refers to 50 weeks or more over the year. Non-workers are those unemployed and/or not in the labor force for the entire year.

For October, data on the employment pattern are unavailable. Maternal employment in October refers to the mother's current employment status. The unemployed are those who are not currently at work but who are looking for work. Those not in the labor force are neither at work nor looking for work.

### Parents' Highest Education

This is a measure of the education of that parent, mother or father, whose education is higher.

### Residential Mobility

For 1983 and 1984, residential mobility is based on a comparison between the current residence and the residence one year ago. For 1978, however, the comparison year is 1975 rather than 1977. Consequently the data on mobility for 1978 cannot be directly compared with the data for the other two years.

### Grade Placement

The distribution of children by grade placement (in the October tables) excludes children attending special schools for which a grade cannot be assigned.

### Modal Grade

The modal grade measure indicates how many years ahead or behind the child is in comparison with the modal grade for children of his or her age. The modal grade for five-year-old children in October is kindergarten; for six-year olds, first grade; and so on, one grade higher for each additional year of age. This measurement is intended as a proxy for grade failure, or advancement. However, it should be noted that children who just miss the age cutoffs established by their school districts for entry into school where these cutoffs are very early in the school year will be one year behind the modal grade yet will never have repeated a grade. Similarly, children who just make the age cutoff in areas with a late cutoff will be one year ahead of the modal grade for October yet will not have skipped a grade. We cannot determine precisely from these data what proportions of children are affected in either of these ways, but the proportion one year ahead (around 8 percent) probably is an upper limit for both situations.

## Population Bases for the Tables

In general, the universe of interest is defined as children living in households and aged 5 to 18 for the tables based on the March survey. For the October tables the lower end of the age range is extended down to age 3. However, for many tables the population on which the percentages are based is smaller, because the variable of interest in the table is defined over a more restrictive definition of the population. Furthermore, most variables are subject to the possibility of missing data; in such cases children with missing data are excluded from the base. Variations in the population definitions are described below by variable.

Race/Ethnicity. The tables present data only for Hispanics and non-Hispanic blacks and whites. Persons of other races are not shown in the tables.

Family Structure. In the March tables, family structure is defined only for children living in families. Those living on their own or in group quarters are excluded. In October, family structure is defined only for children living in households where the householder is the child's parent. (See the discussion of the definition of family structure, above).

Maternal Employment/Education. These variables are defined only for children with mothers in the household.

Parents' Highest Education. This variable is defined only for children with a mother or a father in the household.

Grade Placement. Grade placement of the child is defined only for children attending or enrolled in a graded school or in a college or university. Children in preschool or nursery school are not included, nor are those in special or vocational schools that are not graded in the traditional way.

Control of School. This variable is defined only for children enrolled in or attending school.

Modal Grade. Modal grade is defined only for children enrolled in or attending a graded school and in kindergarten through 12th grade. Consequently, children in the upper grades who have dropped out of school are not included, nor are children in special schools that do not have grades. In both these instances, especially the former, the children not included are also those who most likely were or would have been behind modal grade had they stayed in school or attended a regular graded school. Thus the modal grade variable is likely to somewhat understate educational retardation for the school age population as a whole.

## Points on the Interpretation of the Tables

Beyond the issues of variable definition and population definition set out above, there are a few additional points that bear noting regarding the statistics presented in the tables.

Sample Numbers. The design of the Current Population Survey requires the use of weights to produce valid estimates of percents. These weights have been used to calculate the statistics in the tables. The weights have been calculated by the Bureau of the Census and when applied produce population estimates of numbers of persons in the United States. The Ns reported in the tables are partially weighted. That is, the weights have been applied and the resulting population estimates have been reduced by multiplying by the overall sampling fraction. This procedure produces Ns that are approximately equal to the wholely unweighted Ns, so that approximate estimates of sampling errors can be calculated. At the same time, weights adjusting for other factors, such as differences in coverage by race, are incorporated in these Ns. Therefore, it is possible, if the user of a table desires to do so, to calculate estimated percents that are not reported directly in the table, such as the overall percent black, white or Hispanic.

Standard Errors. Formulas for the calculation of approximate standard errors are presented in the technical appendices of the Current Population Reports. The details and tables needed for these calculations are too lengthy to be summarized here. However, a good description covering the years included in the present tables is given in Series P-60, No. 147. This description is based on the use of population estimates rather than sample sizes. To transform the partially weighted sample Ns reported in our tables to population estimates (in thousands), use the following factors as multipliers:

| | March | / | October |
|---|---|---|---|
| 1984 / 1983 | 1.37 | | 1.32 |
| 1983 / 1982 | 1.34 | | 1.41 |
| 1978 / 1977 | 1.35 | | 1.35 |

Household and Family Status of Older Children. Through about age 16, children in almost all cases live in families with their parents or other relatives. An exception to this is foster children who, along with a few others, are identified by the Bureau of the Census as "unrelated individuals." Such children will not be found in tables using any variable describing a parent or parents (such as family structure, maternal employment, and so on). By age 17 and, especially, 18 many children have begun to establish their own residences, and may be found in group quarters, as householders living alone, or as householders with their own families. These children are also excluded from tables using variables pertaining to parents. Since there are so many more such children at these ages, substantial drops in Ns may be observed in some rows of the tables. For example, in the table on family structure (based on March data) the Ns for the rows for those "not enrolled in school and aged 12 to 18" are reduced to less than half the total number of such children. This is because most such children live on their own and are therefore excluded from the "family structure" variable.

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## Tables Based on the Current Population Surveys of March 1978, 1983 and 1984

### Table 1: Percent Distribution on Poverty Status* for U.S. School-aged Children (Aged 5-18), by Race/Ethnicity; 1978, 1983, 1984.

| | Poverty Status | | | | | | |
|---|---|---|---|---|---|---|---|
| | Poor | | | Non-poor | | | |
| | Total | < 50% of poverty line | 50-100% of poverty line | Total | 100-125% of poverty line | Over 125% of poverty line | (N) |
| **All children** | | | | | | | |
| 1978 | 16.4 | 5.8 | 10.6 | 83.6 | 5.7 | 77.9 | (35,640) |
| 1983 | 21.9 | 9.6 | 12.3 | 78.2 | 5.7 | 72.5 | (36,171) |
| 1984 | 22.1 | 10.2 | 11.9 | 77.9 | 5.7 | 72.5 | (35,242) |
| **Race/Ethnicity** | | | | | | | |
| **Black** | | | | | | | |
| 1978 | 42.4 | 14.4 | 28.0 | 57.6 | 11.0 | 46.6 | (5,240) |
| 1983 | 48.0 | 25.0 | 23.0 | 52.0 | 8.3 | 43.7 | (5,310) |
| 1984 | 47.9 | 25.9 | 22.0 | 52.1 | 8.2 | 43.9 | (5,155) |
| **Hispanic** | | | | | | | |
| 1978 | 30.5 | 6.3 | 24.2 | 69.5 | 9.0 | 60.5 | (2,127) |
| 1983 | 39.6 | 13.2 | 26.4 | 60.4 | 9.3 | 51.1 | (3,141) |
| 1984 | 37.9 | 15.4 | 22.5 | 62.1 | 10.5 | 51.7 | (3,101) |
| **White** | | | | | | | |
| 1978 | 9.5 | 3.5 | 6.0 | 90.5 | 4.1 | 86.4 | (26,809) |
| 1983 | 14.1 | 6.0 | 8.2 | 85.9 | 4.7 | 81.2 | (25,916) |
| 1984 | 14.5 | 6.3 | 8.1 | 85.5 | 4.6 | 80.9 | (25,247) |

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*Poverty is defined for the calendar year preceeding the March survey date. For example, the lines for data collected in March, 1984 display poverty rates based on 1983 income.

## Table 2: Percent Distribution on Mother's Education for U.S. School-aged Children (Aged 5-18), by Poverty and Race/Ethnicity; 1978, 1983, 1984.

| | 8th grade or less | Some high school | High school graduate | Some college | College graduate | (N) |
|---|---|---|---|---|---|---|
| **All children** | | | | | | |
| 1978 | 9.3 | 21.3 | 44.4 | 15.6 | 9.4 | (30,533) |
| 1983 | 7.8 | 16.3 | 44.0 | 19.6 | 12.4 | (32,041) |
| 1984 | 7.5 | 15.7 | 44.0 | 19.6 | 13.2 | (31,439) |
| **Poverty*** | | | | | | |
| Poor children | | | | | | |
| 1978 | 23.4 | 37.4 | 28.5 | 9.1 | 1.5 | (4,487) |
| 1983 | 19.6 | 30.7 | 35.9 | 10.8 | 3.0 | (6,615) |
| 1984 | 18.1 | 32.6 | 35.2 | 11.4 | 2.7 | (6,557) |
| Non-poor | | | | | | |
| 1978 | 6.8 | 18.5 | 47.1 | 16.8 | 10.8 | (26,045) |
| 1983 | 4.7 | 12.5 | 46.1 | 21.8 | 14.8 | (25,426) |
| 1984 | 4.7 | 11.3 | 46.4 | 21.7 | 16.0 | (24,883) |
| **Race/Ethnicity** | | | | | | |
| Black | | | | | | |
| 1978 | 12.9 | 38.4 | 32.7 | 12.3 | 3.7 | (4,150) |
| 1983 | 8.0 | 29.5 | 40.1 | 17.7 | 4.6 | (4,563) |
| 1984 | 7.3 | 27.0 | 40.1 | 18.6 | 7.0 | (4,356) |
| Hispanic | | | | | | |
| 1978 | 40.5 | 22.3 | 26.1 | 7.3 | 3.8 | (1,852) |
| 1983 | 40.9 | 21.3 | 25.6 | 8.5 | 3.8 | (2,786) |
| 1984 | 39.4 | 20.8 | 26.7 | 9.4 | 3.7 | (2,747) |
| White | | | | | | |
| 1978 | 5.5 | 18.1 | 48.3 | 17.2 | 10.9 | (23,421) |
| 1983 | 3.4 | 13.1 | 47.5 | 21.6 | 14.4 | (23,195) |
| 1984 | 3.3 | 12.8 | 47.3 | 21.4 | 15.1 | (22,870) |

*Poverty is defined for the calendar year preceeding the March survey date. For example, the lines for data collected in March, 1984 display poverty rates based on 1983 income.

## Table 2: Percent Distribution on Mother's Education for U.S. School-aged Children (Aged 5-18), by Poverty and Race/Ethnicity; 1978, 1983, 1984. cont'd.

| | 8th grade or less | Some high school | High school graduate | Some college | College graduate | (N) |
|---|---|---|---|---|---|---|
| **Age/Enrollment** | | | | | | |
| Enrolled | | | | | | |
| 5-11 | | | | | | |
| 1978 | 7.8 | 20.9 | 44.3 | 16.9 | 10.2 | (15,295) |
| 1983 | 6.8 | 16.5 | 43.3 | 20.5 | 12.9 | (15,470) |
| 1984 | 6.6 | 16.1 | 42.8 | 20.3 | 14.2 | (15,224) |
| 12-18 | | | | | | |
| 1978 | 10.3 | 21.3 | 44.8 | 14.7 | 8.9 | (14,191) |
| 1983 | 8.4 | 15.5 | 44.6 | 19.2 | 12.4 | (15,104) |
| 1984 | 8.0 | 15.1 | 45.2 | 19.1 | 12.6 | (14,701) |
| Not Enrolled | | | | | | |
| 12-18 | | | | | | |
| 1978 | 16.9 | 27.8 | 39.0 | 10.9 | 5.5 | (1,047) |
| 1983 | 11.6 | 21.7 | 45.9 | 13.6 | 7.3 | (1,467) |
| 1984 | 11.6 | 18.1 | 44.2 | 17.6 | 8.5 | (1,513) |
| **Poverty by Age** | | | | | | |
| Poor | | | | | | |
| 5-11 | | | | | | |
| 1978 | 20.9 | 37.8 | 29.4 | 10.3 | 1.6 | (2,422) |
| 1983 | 16.1 | 31.5 | 37.1 | 11.8 | 3.5 | (3,648) |
| 1984 | 15.2 | 33.1 | 36.0 | 12.8 | 2.9 | (3,622) |
| 12-18 | | | | | | |
| 1978 | 26.4 | 37.0 | 27.4 | 7.7 | 1.4 | (2,065) |
| 1983 | 24.0 | 29.7 | 34.4 | 9.5 | 2.4 | (2,967) |
| 1984 | 21.6 | 32.0 | 34.2 | 9.8 | 2.5 | (2,935) |
| Non-Poor | | | | | | |
| 5-11 | | | | | | |
| 1978 | 5.3 | 17.7 | 47.1 | 18.1 | 11.8 | (12,873) |
| 1983 | 3.9 | 11.9 | 45.3 | 23.2 | 15.8 | (11,822) |
| 1984 | 3.9 | 10.8 | 45.0 | 22.6 | 17.8 | (11,603) |
| 12-18 | | | | | | |
| 1978 | 8.3 | 19.4 | 47.1 | 15.5 | 9.8 | (13,172) |
| 1983 | 5.3 | 13.1 | 46.9 | 20.7 | 14.0 | (13,604) |
| 1984 | 5.4 | 11.7 | 47.6 | 21.0 | 14.4 | (13,280) |

Table 2: Percent Distribution on Mother's Education
for U.S. School-aged Children (Aged 5-18),
by Poverty and Race/Ethnicity; 1978, 1983, 1984.
cont'd.

| | 8th grade or less | Some high school | High school graduate | Some college | College graduate | (N) |
|---|---|---|---|---|---|---|
| **Poverty by Race** | | | | | | |
| Poor | | | | | | |
| Black | | | | | | |
| 1978 | 17.4 | 48.3 | 25.6 | 8.1 | .6 | (1,645) |
| 1983 | 11.6 | 38.0 | 37.8 | 11.7 | .8 | (2,148) |
| 1984 | 11.8 | 40.6 | 35.0 | 11.5 | 1.1 | (2,060) |
| Hispanic | | | | | | |
| 1978 | 59.9 | 24.7 | 11.3 | 3.1 | 1.0 | (557) |
| 1983 | 58.9 | 23.2 | 14.6 | 2.7 | .7 | (1,081) |
| 1984 | 50.5 | 25.4 | 17.8 | 3.8 | 2.5 | (1,020) |
| White | | | | | | |
| 1978 | 17.1 | 32.8 | 36.0 | 11.8 | 2.3 | (2,057) |
| 1983 | 10.8 | 28.5 | 42.4 | 13.2 | 5.2 | (3,056) |
| 1984 | 10.1 | 30.1 | 41.9 | 14.2 | 3.8 | (3,074) |
| All Non Poor | | | | | | |
| 1978 | 6.8 | 18.5 | 47.1 | 16.8 | 10.8 | (26,045) |
| 1983 | 4.7 | 12.5 | 46.1 | 21.8 | 14.8 | (25,426) |
| 1984 | 4.7 | 11.3 | 46.4 | 21.7 | 16.0 | (24,883) |

Table 3: Percent Distribution on Parents' Highest Education for U.S. School-aged Children (Aged 5-18), by Poverty and Race/Ethnicity; 1978, 1983, 1984.

| | 8th grade or less | Some high school | High school graduate | Some college | College graduate | (N) |
|---|---|---|---|---|---|---|
| **All children** | | | | | | |
| 1978 | 6.6 | 15.8 | 38.8 | 19.0 | 19.8 | (31,033) |
| 1983 | 6.0 | 12.2 | 36.6 | 22.6 | 22.6 | (33,474) |
| 1984 | 5.5 | 11.8 | 36.7 | 22.7 | 23.3 | (32,686) |
| **Poverty*** | | | | | | |
| Poor children | | | | | | |
| 1978 | 20.3 | 36.2 | 30.4 | 10.7 | 2.4 | (4,580) |
| 1983 | 16.9 | 28.7 | 36.5 | 12.5 | 5.3 | (6,849) |
| 1984 | 15.2 | 29.9 | 36.0 | 14.1 | 4.8 | (6,758) |
| Non-poor | | | | | | |
| 1978 | 4.3 | 12.2 | 40.2 | 20.5 | 22.8 | (26,453) |
| 1983 | 3.2 | 8.0 | 36.6 | 25.2 | 27.0 | (26,626) |
| 1984 | 3.0 | 7.1 | 36.9 | 24.9 | 28.1 | (25,928) |
| **Race/Ethnicity** | | | | | | |
| Black | | | | | | |
| 1978 | 11.3 | 32.9 | 35.2 | 15.1 | 5.6 | (4,231) |
| 1983 | 7.2 | 26.0 | 39.9 | 19.9 | 7.0 | (4,760) |
| 1984 | 6.2 | 23.9 | 39.8 | 20.4 | 9.6 | (4,550) |
| Hispanic | | | | | | |
| 1978 | 31.5 | 21.1 | 27.2 | 11.3 | 8.9 | (1,881) |
| 1983 | 34.3 | 19.1 | 26.2 | 13.1 | 7.3 | (2,885) |
| 1984 | 31.0 | 20.0 | 27.4 | 13.7 | 8.0 | (2,854) |
| White | | | | | | |
| 1978 | 3.4 | 12.2 | 40.4 | 20.7 | 23.3 | (23,787) |
| 1983 | 2.2 | 8.8 | 37.4 | 24.7 | 26.9 | (24,254) |
| 1984 | 2.1 | 8.4 | 37.5 | 24.7 | 27.4 | (23,742) |

*Poverty is defined for the calendar year preceeding the March survey date. For example, the lines for data collected in March, 1984 display poverty rates based on 1983 income.

Table 3: Percent Distribution on Parents' Highest Education
for U.S. School-aged Children (Aged 5-18),
by Poverty and Race/Ethnicity; 1978, 1983, 1984.
cont'd.

| | 8th grade or less | Some high school | High school graduate | Some college | College graduate | (N) |
|---|---|---|---|---|---|---|
| **Age/Enrollment** | | | | | | |
| Enrolled | | | | | | |
| 5-11 | | | | | | |
| 1978 | 5.2 | 14.9 | 38.3 | 20.7 | 20.8 | (15,493) |
| 1983 | 5.1 | 12.3 | 35.7 | 24.1 | 22.9 | (16,037) |
| 1984 | 4.7 | 12.1 | 35.5 | 23.7 | 24.0 | (15,749) |
| 12-18 | | | | | | |
| 1978 | 7.6 | 16.2 | 39.4 | 17.7 | 19.1 | (14,469) |
| 1983 | 6.6 | 11.7 | 37.1 | 21.4 | 23.2 | (15,859) |
| 1984 | 5.9 | 11.3 | 37.7 | 21.8 | 23.3 | (15,356) |
| Not Enrolled | | | | | | |
| 12-18 | | | | | | |
| 1978 | 13.8 | 22.3 | 36.7 | 13.7 | 13.6 | (1,071) |
| 1983 | 8.9 | 17.0 | 41.2 | 19.3 | 13.6 | (1,577) |
| 1984 | 9.0 | 14.7 | 38.5 | 21.4 | 16.4 | (1,580) |
| **Poverty by Age** | | | | | | |
| Poor | | | | | | |
| 5-11 | | | | | | |
| 1978 | 17.4 | 36.4 | 31.2 | 12.5 | 2.5 | (2,464) |
| 1983 | 13.6 | 29.2 | 37.6 | 13.5 | 6.1 | (3,748) |
| 1984 | 12.4 | 30.8 | 36.5 | 15.5 | 4.9 | (3,715) |
| 12-18 | | | | | | |
| 1978 | 23.8 | 35.9 | 29.5 | 8.5 | 2.4 | (2,116) |
| 1983 | 20.9 | 28.1 | 35.3 | 11.3 | 4.4 | (3,101) |
| 1984 | 18.7 | 28.8 | 35.5 | 12.4 | 4.7 | (3,043) |
| Non-Poor | | | | | | |
| 5-11 | | | | | | |
| 1978 | 3.0 | 10.9 | 39.7 | 22.3 | 24.2 | (13,029) |
| 1983 | 2.5 | 7.2 | 35.1 | 27.3 | 28.0 | (12,290) |
| 1984 | 2.4 | 6.3 | 35.3 | 26.3 | 29.9 | (12,035) |
| 12-18 | | | | | | |
| 1978 | 5.5 | 13.6 | 40.8 | 18.8 | 21.3 | (13,424) |
| 1983 | 3.8 | 8.7 | 37.9 | 23.4 | 26.2 | (14,336) |
| 1984 | 3.5 | 7.8 | 38.3 | 23.8 | 26.6 | (13,893) |

Table 3: Percent Distribution on Parents' Highest Education
for U.S. School-aged Children (Aged 5-18),
by Poverty and Race/Ethnicity; 1978, 1983, 1984.
cont'd.

| | 8th grade or less | Some high school | High school graduate | Some college | College graduate | (N) |
|---|---|---|---|---|---|---|
| Poverty by Race | | | | | | |
| Poor | | | | | | |
| Black | | | | | | |
| 1978 | 15.8 | 48.8 | 26.2 | 8.6 | .6 | (1,677) |
| 1983 | 10.9 | 36.3 | 39.1 | 12.6 | 1.2 | (2,212) |
| 1984 | 10.9 | 39.0 | 36.7 | 11.8 | 1.6 | (2,117) |
| Hispanic | | | | | | |
| 1978 | 53.2 | 26.8 | 14.9 | 3.7 | 1.4 | (568) |
| 1983 | 53.5 | 24.1 | 16.9 | 4.2 | 1.3 | (1,109) |
| 1984 | 44.6 | 26.9 | 20.2 | 5.6 | 2.7 | (1,050) |
| White | | | | | | |
| 1978 | 13.8 | 29.3 | 38.7 | 14.6 | 3.7 | (2,099) |
| 1983 | 7.7 | 25.7 | 41.5 | 15.7 | 9.4 | (3,178) |
| 1984 | 7.3 | 25.4 | 41.5 | 18.5 | 7.4 | (3,178) |
| All Non-Poor | | | | | | |
| 1978 | 4.3 | 12.2 | 40.2 | 20.5 | 22.8 | (26,453) |
| 1983 | 3.2 | 8.0 | 36.6 | 25.2 | 27.0 | (26,625) |
| 1984 | 3.0 | 7.1 | 36.9 | 24.9 | 28.1 | (25,928) |

## Table 4: Distribution on Family Structure for U.S. School-aged Children (Aged 5-18), by Poverty and Race/Ethnicity; 1978, 1983, 1984.

| | Lives with Both Parents | Lives with Mother Only | Lives with Father Only | Lives with Neither Parent | (N) |
|---|---|---|---|---|---|
| **All children** | | | | | |
| 1978 | 77.9 | 17.6 | 1.7 | 2.7 | (32,395) |
| 1983 | 74.4 | 20.8 | 2.2 | 2.5 | (32,837) |
| 1984 | 74.5 | 20.8 | 2.3 | 2.4 | (32,087) |
| **Poverty*** | | | | | |
| Poor children | | | | | |
| 1978 | 37.9 | 53.1 | 2.3 | 6.8 | (5,154) |
| 1983 | 41.6 | 51.7 | 2.2 | 4.5 | (7,038) |
| 1984 | 42.5 | 50.7 | 2.5 | 4.3 | (6,906) |
| Non-poor | | | | | |
| 1978 | 85.5 | 10.9 | 1.6 | 2.0 | (27,241) |
| 1983 | 83.4 | 12.4 | 2.2 | 2.0 | (25,799) |
| 1984 | 83.3 | 12.6 | 2.3 | 1.9 | (25,182) |
| **Race/Ethnicity** | | | | | |
| Black | | | | | |
| 1978 | 45.4 | 44.1 | 2.1 | 8.5 | (4,830) |
| 1983 | 42.2 | 49.2 | 2.6 | 5.9 | (4,766) |
| 1984 | 42.5 | 48.3 | 3.1 | 6.1 | (4,654) |
| Hispanic | | | | | |
| 1978 | 74.7 | 20.6 | 1.7 | 3.1 | (1,962) |
| 1983 | 67.9 | 27.6 | 1.7 | 2.8 | (2,878) |
| 1984 | 69.4 | 25.8 | 1.8 | 3.0 | (2,855) |
| White | | | | | |
| 1978 | 84.8 | 12.1 | 1.6 | 1.5 | (24,391) |
| 1983 | 81.5 | 14.6 | 2.2 | 1.7 | (23,571) |
| 1984 | 81.5 | 14.9 | 2.2 | 1.4 | (22,990) |
| **Age/Enrollment** | | | | | |
| Enrolled | | | | | |
| 5-11 | | | | | |
| 1978 | 78.9 | 17.1 | 1.4 | 2.6 | (16,226) |
| 1983 | 75.2 | 21.1 | 1.6 | 2.1 | (16,794) |
| 1984 | 75.5 | 20.6 | 1.9 | 2.0 | (16,476) |

*Poverty is defined for the calendar year preceeding the March survey date. For example, the lines for data collected in March, 1984 display poverty rates based on 1983 income.

## Table 4: Percent Distribution on Family Structure for U.S. School-aged Children (Aged 5-18), by Poverty and Race/Ethnicity; 1978, 1983, 1984. cont'd.

| | Lives with Both Parents | Lives with Mother Only | Lives with Father Only | Lives with Neither Parent | (N) |
|---|---|---|---|---|---|
| **Age/Enrollment** | | | | | |
| Enrolled | | | | | |
| 5-11 | | | | | |
| 1978 | 78.9 | 17.1 | 1.4 | 2.6 | (16,226) |
| 1983 | 75.2 | 21.1 | 1.6 | 2.1 | (16,794) |
| 1984 | 75.5 | 20.6 | 1.9 | 2.0 | (16,476) |
| 12-18 | | | | | |
| 1978 | 77.3 | 17.9 | 2.0 | 2.8 | (15,031) |
| 1983 | 73.9 | 20.5 | 2.7 | 2.9 | (15,234) |
| 1984 | 73.7 | 20.9 | 2.8 | 2.6 | (14,706) |
| Not Enrolled | | | | | |
| 12-16 | | | | | |
| 1978 | 71.4 | 21.4 | 2.5 | 4.8 | (1,138) |
| 1983 | 68.2 | 20.8 | 5.3 | 5.7 | (807) |
| 1984 | 69.0 | 22.4 | 3.1 | 5.5 | (905) |
| **Poverty by Age** | | | | | |
| Poor | | | | | |
| 5-11 | | | | | |
| 1978 | 37.4 | 54.4 | 1.9 | 6.4 | (2,807) |
| 1983 | 42.1 | 52.7 | 1.6 | 3.7 | (3,997) |
| 1984 | 42.7 | 51.7 | 2.1 | 3.5 | (3,931) |
| 12-18 | | | | | |
| 1978 | 38.4 | 51.6 | 2.7 | 7.3 | (2,347) |
| 1983 | 41.0 | 50.4 | 3.0 | 5.6 | (3,041) |
| 1984 | 42.2 | 49.4 | 3.0 | 5.4 | (2,975) |
| Non-Poor | | | | | |
| 5-11 | | | | | |
| 1978 | 87.6 | 9.4 | 1.3 | 1.8 | (13,419) |
| 1983 | 85.5 | 11.2 | 1.7 | 1.6 | (12,797) |
| 1984 | 85.8 | 10.8 | 1.8 | 1.6 | (12,546) |
| 12-18 | | | | | |
| 1978 | 83.4 | 12.4 | 1.9 | 2.2 | (13,822) |
| 1983 | 81.2 | 13.5 | 2.8 | 2.5 | (13,002) |
| 1984 | 80.8 | 14.3 | 2.7 | 2.2 | (12,636) |

Table 4: Percent Distribution on Family Structure
for U.S. School-aged Children (Aged 5-18),
by Poverty and Race/Ethnicity; 1978, 1983, 1984.
cont'd.

| | Lives with Both Parents | Lives with Mother Only | Lives with Father Only | Lives with Neither Parent | (N) |
|---|---|---|---|---|---|
| Poverty by Race | | | | | |
| Poor | | | | | |
| Black | | | | | |
| 1978 | 19.0 | 67.3 | 2.1 | 11.6 | (2,036) |
| 1983 | 19.1 | 72.0 | 2.2 | 6.6 | (2,267) |
| 1984 | 20.8 | 70.0 | 2.5 | 6.8 | (2,201) |
| Hispanic | | | | | |
| 1978 | 45.5 | 49.2 | 2.0 | 3.4 | (593) |
| 1983 | 47.4 | 48.3 | 1.5 | 2.8 | (1,134) |
| 1984 | 47.1 | 47.5 | 1.5 | 4.0 | (1,073) |
| White | | | | | |
| 1978 | 51.4 | 42.9 | 2.4 | 3.3 | (2,266) |
| 1983 | 53.6 | 40.6 | 2.5 | 3.3 | (3,258) |
| 1984 | 53.4 | 41.3 | 2.9 | 2.5 | (3,197) |
| All Non-Poor | | | | | |
| 1978 | 85.5 | 10.9 | 1.6 | 2.0 | (27,241) |
| 1983 | 83.4 | 12.4 | 2.2 | 2.0 | (25,799) |
| 1984 | 83.3 | 12.6 | 2.3 | 1.9 | (25,182) |

Table 5: Percent Distribution on Family Size (Number of Children) for U.S. School-aged Children (Aged 5-18), by Poverty and Race/Ethnicity; 1978, 1983, 1984.

| | One Child | 2-3 Children | 4 or more Children | (N) |
|---|---|---|---|---|
| **All children** | | | | |
| 1978 | 17.5 | 58.1 | 24.4 | (34,306) |
| 1983 | 21.9 | 61.2 | 16.9 | (34,734) |
| 1984 | 22.0 | 61.4 | 16.6 | (33,819) |
| **Poverty*** | | | | |
| Poor children | | | | |
| 1978 | 10.3 | 46.0 | 43.6 | (5,473) |
| 1983 | 15.8 | 51.3 | 32.8 | (7,550) |
| 1984 | 15.9 | 52.8 | 31.3 | (7,392) |
| Non-poor | | | | |
| 1978 | 18.9 | 60.4 | 20.8 | (28,833) |
| 1983 | 23.6 | 63.9 | 12.5 | (27,184) |
| 1984 | 23.7 | 63.8 | 12.5 | (26,427) |
| **Race/Ethnicity** | | | | |
| Black | | | | |
| 1978 | 14.5 | 46.4 | 39.2 | (5,133) |
| 1983 | 20.3 | 53.6 | 26.1 | (5,154) |
| 1984 | 20.3 | 55.5 | 24.1 | (4,992) |
| Hispanic | | | | |
| 1978 | 13.1 | 51.6 | 35.3 | (2,067) |
| 1983 | 14.6 | 53.8 | 31.6 | (3,048) |
| 1984 | 14.0 | 55.8 | 30.2 | (3,011) |
| White | | | | |
| 1978 | 18.5 | 61.0 | 20.5 | (25,820) |
| 1983 | 23.2 | 63.8 | 13.0 | (24,832) |
| 1984 | 23.5 | 63.5 | 12.9 | (24,151) |

*Poverty is defined for the calendar year preceeding the March survey date. For example, the lines for data collected in March, 1984 display poverty rates based on 1983 income.

## Table 5: Percent Distribution on Family Size (Number of Children) for U.S. School-aged Children (Aged 5-18), by Poverty and Race/Ethnicity; 1978, 1983, 1984. cont'd.

| | One Child | 2-3 Children | 4 or more Children | (N) |
|---|---|---|---|---|
| **Age/Enrollment** | | | | |
| Enrolled | | | | |
| 5-11 | | | | |
| 1978 | 11.3 | 63.8 | 24.9 | (16,226) |
| 1983 | 14.5 | 67.5 | 18.1 | (16,795) |
| 1984 | 13.9 | 67.9 | 18.2 | (16,477) |
| 12-18 | | | | |
| 1978 | 21.7 | 53.7 | 24.6 | (16,074) |
| 1983 | 27.3 | 56.5 | 16.2 | (16,361) |
| 1984 | 28.1 | 56.6 | 15.3 | (15,695) |
| Not Enrolled | | | | |
| 12-18 | | | | |
| 1978 | 34.0 | 47.0 | 18.9 | (2,006) |
| 1983 | 46.4 | 42.1 | 11.5 | (1,579) |
| 1984 | 45.0 | 42.5 | 12.4 | (1,647) |
| **Poverty by Age** | | | | |
| Poor | | | | |
| 5-11 | | | | |
| 1978 | 7.8 | 48.9 | 43.3 | (2,807) |
| 1983 | 11.4 | 55.3 | 33.2 | (3,998) |
| 1984 | 11.3 | 56.9 | 31.8 | (3,931) |
| 12-18 | | | | |
| 1978 | 13.1 | 42.9 | 44.0 | (2,666) |
| 1983 | 20.8 | 46.8 | 32.4 | (3,552) |
| 1984 | 21.0 | 48.3 | 30.7 | (3,461) |
| Non-Poor | | | | |
| 5-11 | | | | |
| 1978 | 12.0 | 66.9 | 21.1 | (13,419) |
| 1983 | 15.4 | 71.3 | 13.3 | (12,797) |
| 1984 | 14.7 | 71.3 | 14.0 | (12,546) |
| 12-18 | | | | |
| 1978 | 24.8 | 54.7 | 20.5 | (15,414) |
| 1983 | 31.0 | 57.3 | 11.7 | (14,387) |
| 1984 | 31.9 | 57.0 | 11.1 | (13,881) |

Table 5: Percent Distribution on Family Size (Number of Children)
for U.S. School-aged Children (Aged 5-18),
by Poverty and Race/Ethnicity; 1978, 1983, 1984.
cont'd.

| | One Child | 2-3 Children | 4 or more Children | (N) |
|---|---|---|---|---|
| Poverty by Race | | | | |
| Poor | | | | |
| Black | | | | |
| 1978 | 7.8 | 39.9 | 52.2 | (2,173) |
| 1983 | 14.6 | 48.0 | 37.4 | (2,480) |
| 1984 | 16.1 | 50.5 | 33.4 | (2,395) |
| Hispanic | | | | |
| 1978 | 9.5 | 39.9 | 50.6 | (632) |
| 1983 | 9.6 | 45.2 | 45.2 | (1,201) |
| 1984 | 10.4 | 45.8 | 43.8 | (1,132) |
| White | | | | |
| 1978 | 12.8 | 54.2 | 33.0 | (2,402) |
| 1983 | 18.9 | 56.4 | 24.6 | (3,469) |
| 1984 | 18.0 | 58.0 | 24.0 | (3,406) |
| All Non-Poor | | | | |
| 1978 | 18.9 | 60.4 | 20.8 | (28,833) |
| 1983 | 23.6 | 63.9 | 12.5 | (27,185) |
| 1984 | 23.7 | 63.8 | 12.5 | (26,427) |

## Table 6: Percent Distribution on Maternal Employment* for U.S. School-aged Children (Aged 5-18), by Poverty and Race/Ethnicity; 1978, 1983, 1984.

| | Full-time Year-Round | Part-time Year-Round | Full-time Part of Year | Part-time Part of Year | Non-Worker | (N) |
|---|---|---|---|---|---|---|
| **All children** | | | | | | |
| 1978 | 23.0 | 7.6 | 14.0 | 13.9 | 41.5 | (30,533) |
| 1983 | 27.7 | 9.1 | 13.3 | 13.5 | 36.4 | (32,041) |
| 1984 | 29.1 | 9.4 | 12.1 | 13.7 | 35.7 | (31,439) |
| **Poverty*** | | | | | | |
| Poor children | | | | | | |
| 1978 | 8.4 | 3.9 | 15.1 | 9.9 | 62.8 | (4,487) |
| 1983 | 10.1 | 4.6 | 13.5 | 12.3 | 59.5 | (6,615) |
| 1984 | 8.6 | 4.9 | 12.8 | 12.4 | 61.3 | (6,557) |
| Non-poor | | | | | | |
| 1978 | 25.6 | 8.2 | 13.8 | 14.6 | 37.8 | (26,045) |
| 1983 | 32.3 | 10.3 | 13.2 | 13.8 | 30.4 | (25,426) |
| 1984 | 34.5 | 10.6 | 12.0 | 14.0 | 28.9 | (24,883) |
| **Race/Ethnicity** | | | | | | |
| Black | | | | | | |
| 1978 | 31.2 | 5.3 | 17.1 | 9.2 | 37.2 | (4,150) |
| 1983 | 32.6 | 4.3 | 15.4 | 8.9 | 38.8 | (4,563) |
| 1984 | 34.3 | 5.2 | 12.8 | 9.0 | 38.7 | (4,356) |
| Hispanic | | | | | | |
| 1978 | 17.5 | 4.1 | 15.4 | 8.6 | 54.5 | (1,852) |
| 1983 | 22.3 | 5.5 | 14.6 | 9.0 | 48.6 | (2,786) |
| 1984 | 23.4 | 4.9 | 13.2 | 8.3 | 50.1 | (2,747) |
| White | | | | | | |
| 1978 | 21.8 | 8.4 | 13.2 | 15.3 | 41.2 | (23,421) |
| 1983 | 27.0 | 10.6 | 12.8 | 15.2 | 34.3 | (23,195) |
| 1984 | 28.5 | 10.9 | 12.0 | 15.5 | 33.1 | (22,870) |

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*The pattern of maternal employment, like the poverty rate, is defined for the calendar year prior to the March survey.

Table 6: Percent Distribution on Maternal Employment
for U.S. School-aged Children (Aged 5-18),
by Poverty and Race/Ethnicity; 1978, 1983, 1984.
cont'd.

| | Full-time Year-Round | Part-time Year-Round | Full-time Part of Year | Part-time Part of Year | Non-Worker | (N) |
|---|---|---|---|---|---|---|
| **Age/Enrollment** | | | | | | |
| Enrolled | | | | | | |
| 5-11 | | | | | | |
| 1978 | 19.5 | 6.8 | 15.3 | 14.2 | 44.3 | (15,295) |
| 1983 | 23.7 | 8.1 | 14.1 | 14.4 | 39.8 | (15,470) |
| 1984 | 24.6 | 8.7 | 12.5 | 15.1 | 39.2 | (15,224) |
| 12-18 | | | | | | |
| 1978 | 26.6 | 8.3 | 12.5 | 13.8 | 38.7 | (14,191) |
| 1983 | 31.4 | 10.1 | 12.4 | 12.9 | 33.2 | (15,104) |
| 1984 | 33.4 | 9.9 | 11.9 | 12.4 | 32.5 | (14,701) |
| Not Enrolled | | | | | | |
| 12-18 | | | | | | |
| 1978 | 27.5 | 8.9 | 14.9 | 10.7 | 38.0 | (1,047) |
| 1983 | 31.8 | 10.5 | 13.9 | 11.4 | 32.5 | (1,467) |
| 1984 | 33.9 | 11.3 | 11.3 | 11.5 | 31.9 | (1,513) |
| **Poverty by Age** | | | | | | |
| Poor | | | | | | |
| 5-11 | | | | | | |
| 1978 | 7.3 | 3.2 | 16.8 | 9.7 | 63.0 | (2,422) |
| 1983 | 8.7 | 3.8 | 14.5 | 12.2 | 60.8 | (3,648) |
| 1984 | 7.2 | 4.9 | 12.8 | 12.9 | 62.2 | (3,622) |
| 12-18 | | | | | | |
| 1978 | 9.6 | 4.7 | 13.1 | 10.1 | 62.6 | (2,065) |
| 1983 | 11.7 | 5.5 | 12.3 | 12.5 | 57.9 | (2,967) |
| 1984 | 10.2 | 5.0 | 12.8 | 11.7 | 60.3 | (2,935) |
| Non Poor | | | | | | |
| 5-11 | | | | | | |
| 1978 | 21.7 | 7.5 | 15.0 | 15.1 | 40.7 | (12,873) |
| 1983 | 28.3 | 9.4 | 13.9 | 15.1 | 33.3 | (11,822) |
| 1984 | 30.0 | 9.9 | 12.4 | 15.7 | 32.0 | (11,603) |
| 12-18 | | | | | | |
| 1978 | 29.3 | 9.0 | 12.6 | 14.2 | 34.9 | (13,172) |
| 1983 | 35.8 | 11.1 | 12.6 | 12.8 | 27.8 | (13,604) |
| 1984 | 38.5 | 11.1 | 11.6 | 12.5 | 26.3 | (13,280) |

Table 6: Percent Distribution on Maternal Employment
for U.S. School-aged Children (Aged 5-18),
by Poverty and Race/Ethnicity; 1978, 1983, 1984.
cont'd.

| | Full-time Year-Round | Part-time Year-Round | Full-time Part of Year | Part-time Part of Year | Non-Worker | (N) |
|---|---|---|---|---|---|---|
| **Poverty by Race** | | | | | | |
| Poor | | | | | | |
| Black | | | | | | |
| 1978 | 8.9 | 3.9 | 15.9 | 10.4 | 60.8 | (1,645) |
| 1983 | 10.9 | 4.1 | 13.0 | 10.9 | 61.2 | (2,148) |
| 1984 | 10.0 | 3.3 | 11.4 | 11.3 | 64.1 | (2,060) |
| Hispanic | | | | | | |
| 1978 | 2.7 | 2.1 | 12.8 | 6.7 | 75.8 | (557) |
| 1983 | 6.7 | 3.6 | 11.5 | 8.9 | 69.3 | (1,081) |
| 1984 | 4.6 | 3.6 | 11.0 | 8.2 | 72.6 | (1,020) |
| White | | | | | | |
| 1978 | 9.7 | 4.5 | 14.9 | 10.9 | 60.0 | (2,057) |
| 1983 | 10.2 | 5.3 | 14.9 | 15.0 | 54.5 | (3,056) |
| 1984 | 8.6 | 6.5 | 15.0 | 15.1 | 54.8 | (3,074) |
| All Non-Poor | | | | | | |
| 1978 | 25.6 | 8.2 | 13.8 | 14.6 | 37.8 | (26,045) |
| 1983 | 32.3 | 10.3 | 13.2 | 13.8 | 30.4 | (25,426) |
| 1984 | 34.5 | 10.6 | 12.0 | 14.0 | 28.9 | (24,883) |

### Table 7: Percent Distribution on Residential Mobility* for U.S. School-aged Children (Aged 5-18), by Poverty and Race/Ethnicity; 1978, 1983, 1984.

| | Same Residence | Different Residence, Same SMSA/Area | Different Residence, Different SMSA/Area | (N) |
|---|---|---|---|---|
| **All children** | | | | |
| 1978 | 69.6 | 19.8 | 10.7 | (35,127) |
| 1983 | 86.0 | 9.2 | 4.8 | (35,894) |
| 1984 | 85.2 | 10.0 | 4.8 | (34,937) |
| **Poverty**** | | | | |
| Poor children | | | | |
| 1978 | 57.8 | 25.9 | 16.3 | (5,754) |
| 1983 | 76.1 | 15.2 | 8.7 | (7,818) |
| 1984 | 77.1 | 15.0 | 7.9 | (7,697) |
| Non-poor | | | | |
| 1978 | 71.9 | 18.6 | 9.6 | (29,372) |
| 1983 | 88.8 | 7.6 | 3.6 | (28,076) |
| 1984 | 87.5 | 8.6 | 3.9 | (27,241) |
| **Race/Ethnicity** | | | | |
| Black | | | | |
| 1978 | 65.8 | 26.1 | 8.1 | (5,232) |
| 1983 | 82.7 | 14.3 | 2.9 | (5,299) |
| 1984 | 83.2 | 13.2 | 3.6 | (5,137) |
| Hispanic | | | | |
| 1978 | 66.2 | 28.7 | 5.1 | (2,090) |
| 1983 | 83.1 | 14.1 | 2.8 | (3,121) |
| 1984 | 83.2 | 14.3 | 2.5 | (3,086) |
| White | | | | |
| 1978 | 67.9 | 17.1 | 15.0 | (26,357) |
| 1983 | 87.2 | 7.6 | 5.2 | (25,692) |
| 1984 | 86.0 | 8.7 | 5.4 | (24,999) |

*For 1983 and 1984, mobility is defined by comparing the current residence with the place of residence one year prior to the survey. For 1978, the reference period is three years.

**Poverty is defined for the calendar year preceeding the March survey date. For example, the lines for data collected in March, 1984 display poverty rates based on 1983 income.

## Table 7: Percent Distribution on Residential Mobility for U.S. School-aged Children (Aged 5-18), by Poverty and Race/Ethnicity; 1978, 1983, 1984. cont'd.

| | Same Residence | Different Residence, Same SMSA/Area | Different Residence, Different SMSA/Area | (N) |
|---|---|---|---|---|
| **Age/Enrollment** | | | | |
| Enrolled | | | | |
| 5-11 | | | | |
| 1978 | 62.9 | 24.1 | 13.0 | (16,049) |
| 1983 | 83.5 | 10.9 | 5.5 | (16,691) |
| 1984 | 82.8 | 11.8 | 5.4 | (16,381) |
| 12-18 | | | | |
| 1978 | 76.9 | 15.2 | 7.9 | (16,510) |
| 1983 | 89.6 | 6.9 | 3.6 | (17,048) |
| 1984 | 88.9 | 7.4 | 3.7 | (16,383) |
| Not Enrolled | | | | |
| 12-18 | | | | |
| 1978 | 64.1 | 22.3 | 13.7 | (2,568) |
| 1983 | 77.0 | 14.8 | 8.2 | (2,155) |
| 1984 | 76.7 | 15.5 | 7.8 | (2,172) |
| **Poverty by Age** | | | | |
| Poor | | | | |
| 5-11 | | | | |
| 1978 | 53.7 | 28.4 | 17.8 | (2,870) |
| 1983 | 74.1 | 16.8 | 9.2 | (3,997) |
| 1984 | 74.9 | 17.1 | 7.9 | (3,993) |
| 12-18 | | | | |
| 1978 | 61.8 | 23.5 | 14.7 | (2,884) |
| 1983 | 78.2 | 13.5 | 8.3 | (3,821) |
| 1984 | 79.4 | 12.8 | 7.8 | (3,764) |
| Non-Poor | | | | |
| 5-11 | | | | |
| 1978 | 64.9 | 23.2 | 11.9 | (13,179) |
| 1983 | 86.5 | 9.1 | 4.4 | (12,694) |
| 1984 | 85.2 | 10.2 | 4.6 | (12,450) |
| 12-18 | | | | |
| 1978 | 77.6 | 14.8 | 7.6 | (16,193) |
| 1983 | 90.6 | 6.4 | 3.0 | (15,382) |
| 1984 | 89.5 | 7.2 | 3.3 | (14,791) |

Table 7: Percent Distribution on Residential Mobility
for U.S. School-aged Children (Aged 5-18),
by Poverty and Race/Ethnicity; 1978, 1983, 1984.
cont'd.

| | Same Residence | Different Residence, Same SMSA/Area | Different Residence, Different SMSA/Area | (N) |
|---|---|---|---|---|
| **Poverty by Race** | | | | |
| Poor | | | | |
| Black | | | | |
| 1978 | 60.9 | 27.9 | 11.2 | (2,216) |
| 1983 | 80.4 | 16.2 | 3.4 | (2,544) |
| 1984 | 82.7 | 13.0 | 4.4 | (2,467) |
| Hispanic | | | | |
| 1978 | 59.2 | 34.5 | 6.2 | (645) |
| 1983 | 75.8 | 18.9 | 5.4 | (1,230) |
| 1984 | 78.2 | 18.5 | 3.4 | (1,164) |
| White | | | | |
| 1978 | 55.7 | 23.2 | 21.0 | (2,483) |
| 1983 | 73.5 | 13.3 | 13.2 | (3,602) |
| 1984 | 72.5 | 15.3 | 12.2 | (3,580) |
| All Non-Poor | | | | |
| 1978 | 71.9 | 18.6 | 9.6 | (29,373) |
| 1983 | 88.8 | 7.6 | 3.6 | (28,076) |
| 1984 | 87.5 | 8.6 | 3.9 | (27,241) |

## Table 8: Percent Distribution by Place of Residence for U.S. School-aged Children (Aged 5-18), by Poverty and Race/Ethnicity; 1978, 1983, 1984.

| | Central City of SMSA | Suburb of SMSA | Non-SMSA | (N) |
|---|---|---|---|---|
| **All children** | | | | |
| 1978 | 26.1 | 38.3 | 35.6 | (32,368) |
| 1983 | 27.4 | 40.0 | 32.6 | (32,941) |
| 1984 | 27.5 | 39.9 | 32.6 | (32,053) |
| **Poverty*** | | | | |
| Poor children | | | | |
| 1978 | 39.0 | 21.1 | 39.9 | (5,380) |
| 1983 | 39.3 | 24.8 | 35.9 | (7,323) |
| 1984 | 39.6 | 24.8 | 35.6 | (6,557) |
| Non-poor | | | | |
| 1978 | 23.6 | 41.7 | 34.7 | (26,990) |
| 1983 | 24.0 | 44.4 | 31.6 | (25,617) |
| 1984 | 24.0 | 44.3 | 31.7 | (24,883) |
| **Race/Ethnicity** | | | | |
| Black | | | | |
| 1978 | 53.7 | 18.2 | 28.1 | (5,054) |
| 1983 | 55.5 | 18.9 | 25.6 | (5,128) |
| 1984 | 54.8 | 19.2 | 26.0 | (4,982) |
| Hispanic | | | | |
| 1978 | 53.0 | 30.0 | 17.0 | (1,940) |
| 1983 | 51.9 | 33.9 | 14.2 | (2,985) |
| 1984 | 52.0 | 33.6 | 14.3 | (2,948) |
| White | | | | |
| 1978 | 18.5 | 43.7 | 37.8 | (24,058) |
| 1983 | 18.0 | 46.0 | 36.0 | (23,247) |
| 1984 | 18.0 | 45.8 | 36.2 | (22,581) |

*Poverty is defined for the calendar year preceeding the March survey date. For example, the lines for data collected in March, 1984 display poverty rates based on 1983 income.

### Table 8: Percent Distribution by Place of Residence for U.S. School-aged Children (Aged 5-18), by Poverty and Race/Ethnicity; 1978, 1983, 1984. cont'd.

| | Central City of SMSA | Suburb of SMSA | Non-SMSA | (N) |
|---|---|---|---|---|
| **Age/Enrollment** | | | | |
| Enrolled | | | | |
| 5-11 | | | | |
| 1978 | 26.5 | 37.6 | 35.9 | (14,839) |
| 1983 | 28.6 | 39.0 | 32.4 | (15,255) |
| 1984 | 28.2 | 39.0 | 32.8 | (15,019) |
| 12-18 | | | | |
| 1978 | 25.4 | 39.3 | 35.3 | (15,151) |
| 1983 | 26.4 | 40.9 | 32.7 | (15,664) |
| 1984 | 26.8 | 40.9 | 32.3 | (15,032) |
| Not Enrolled | | | | |
| 12-18 | | | | |
| 1978 | 28.4 | 36.4 | 35.3 | (2,379) |
| 1983 | 26.5 | 40.8 | 32.7 | (2,020) |
| 1984 | 27.7 | 39.4 | 32.9 | (2,002) |
| **Poverty by Age** | | | | |
| Poor | | | | |
| 5-11 | | | | |
| 1978 | 39.7 | 21.2 | 39.0 | (2,690) |
| 1983 | 41.6 | 24.5 | 33.9 | (3,743) |
| 1984 | 40.3 | 25.3 | 34.3 | (3,677) |
| 12-18 | | | | |
| 1978 | 38.3 | 21.0 | 40.7 | (2,690) |
| 1983 | 37.0 | 25.1 | 38.0 | (3,580) |
| 1984 | 38.9 | 24.3 | 36.8 | (3,506) |
| Non-Poor | | | | |
| 5-11 | | | | |
| 1978 | 23.5 | 41.2 | 35.3 | (12,150) |
| 1983 | 24.4 | 43.7 | 31.9 | (11,512) |
| 1984 | 24.3 | 43.4 | 32.3 | (11,343) |
| 12-18 | | | | |
| 1978 | 23.6 | 42.1 | 34.3 | (14,840) |
| 1983 | 23.7 | 44.9 | 31.4 | (14,105) |
| 1984 | 23.8 | 45.0 | 31.2 | (13,528) |

## Table 8: Percent Distribution by Place of Residence for U.S. School-aged Children (Aged 5-18), by Poverty and Race/Ethnicity; 1978, 1983, 1984.
cont'd.

|  |  |  |  |  |
|---|---|---|---|---|
| **Poverty by Race** |  |  |  |  |
| Poor |  |  |  |  |
| Black |  |  |  |  |
| 1978 | 54.4 | 12.8 | 32.7 | (2,141) |
| 1983 | 57.1 | 14.1 | 28.8 | (2,469) |
| 1984 | 57.9 | 13.6 | 28.5 | (2,404) |
| Hispanic |  |  |  |  |
| 1978 | 61.5 | 21.5 | 17.0 | (613) |
| 1983 | 60.2 | 25.9 | 14.0 | (1,187) |
| 1984 | 57.5 | 27.3 | 15.1 | (1,121) |
| White |  |  |  |  |
| 1978 | 20.7 | 28.2 | 51.1 | (2,270) |
| 1983 | 19.3 | 32.7 | 48.0 | (3,270) |
| 1984 | 19.7 | 33.6 | 46.7 | (3,214) |
| All Non-Poor |  |  |  |  |
| 1978 | 23.6 | 41.7 | 34.7 | (26,990) |
| 1983 | 24.0 | 44.4 | 31.6 | (25,617) |
| 1984 | 24.0 | 44.3 | 31.7 | (24,871) |

Table 9: Percent Distribution by School Enrollment Status
for U.S. School-aged Children (Aged 14-18),
by Poverty and Race/Ethnicity; 1978, 1983, 1984.

| | 14-15 | | | 16-17 | | | 18 | | |
|---|---|---|---|---|---|---|---|---|---|
| | enrolled | not enrolled | (N) | enrolled | not enrolled | (N) | enrolled | not enrolled | (N) |
| **All children** | | | | | | | | | |
| 1978 | 94.3 | 5.7 | (5,608) | 82.8 | 17.2 | (5,682) | 54.2 | 45.8 | (2,868) |
| 1983 | 96.3 | 3.7 | (5,304) | 86.4 | 13.6 | (5,535) | 58.7 | 41.3 | (2,987) |
| 1984 | 94.9 | 5.1 | (5,333) | 85.5 | 14.5 | (5,284) | 58.6 | 41.4 | |
| **Poverty*** | | | | | | | | | |
| Poor children | | | | | | | | | |
| 1978 | 90.8 | 9.2 | (858) | 77.1 | 22.9 | (835) | 42.1 | 57.9 | (399) |
| 1983 | 95.8 | 4.2 | (1,092) | 78.2 | 21.8 | (1,078) | 47.0 | 53.0 | (566) |
| 1984 | 95.2 | 4.8 | (1,071) | 78.8 | 21.2 | (1,028) | 45.9 | 54.1 | (582) |
| Non-poor | | | | | | | | | |
| 1978 | 95.0 | 5.0 | (4,750) | 83.7 | 16.3 | (4,847) | 56.2 | 43.8 | (2,469) |
| 1983 | 96.4 | 3.6 | (4,212) | 88.4 | 11.6 | (4,457) | 61.4 | 38.6 | (2,420) |
| 1984 | 94.8 | 5.2 | (4,262) | 87.1 | 12.9 | (4,256) | 61.9 | 38.1 | (2,222) |
| **Race/Ethnicity** | | | | | | | | | |
| Black | | | | | | | | | |
| 1978 | 95.6 | 4.4 | (813) | 84.2 | 15.8 | (799) | 58.0 | 42.0 | (369) |
| 1983 | 97.5 | 2.5 | (769) | 91.8 | 8.2 | (814) | 62.0 | 38.0 | (463) |
| 1984 | 96.2 | 3.8 | (764) | 90.3 | 9.7 | (770) | 60.5 | 39.5 | (413) |
| Hispanic | | | | | | | | | |
| 1978 | 95.1 | 4.9 | (308) | 78.4 | 21.6 | (301) | 52.9 | 47.1 | (140) |
| 1983 | 96.8 | 3.2 | (411) | 83.2 | 16.8 | (422) | 50.7 | 49.3 | (221) |
| 1984 | 94.9 | 5.1 | (433) | 78.1 | 21.9 | (425) | 48.8 | 51.2 | (207) |
| White | | | | | | | | | |
| 1978 | 94.3 | 5.7 | (4,254) | 83.0 | 17.0 | (4,379) | 53.6 | 46.4 | (2,259) |
| 1983 | 96.2 | 3.8 | (3,856) | 85.8 | 14.2 | (4,072) | 58.8 | 41.2 | (2,163) |
| 1984 | 94.7 | 5.3 | (3,869) | 85.3 | 14.7 | (3,840) | 58.6 | 41.4 | (2,068) |

*Poverty is defined for the calendar year preceeding the March survey date. For example, the lines for data collected in March, 1984 display poverty rates based on 1983 income.

## Table 9: Percent Distribution by School Enrollment Status for U.S. School-aged Children (Aged 14-18), by Poverty and Race/Ethnicity; 1978, 1983, 1984. Cont'd.

| | 14-15 | | | 16-17 | | | 18 | | |
|---|---|---|---|---|---|---|---|---|---|
| | enrolled | not enrolled | (N) | enrolled | not enrolled | (N) | enrolled | not enrolled | (N) |
| **Poverty by Race** | | | | | | | | | |
| Poor | | | | | | | | | |
| Black | | | | | | | | | |
| 1978 | 93.4 | 6.6 | (349) | 80.1 | 19.9 | (321) | 50.3 | 49.7 | (447) |
| 1983 | 97.7 | 2.2* | (354) | 87.9 | 12.1 | (372) | 52.2 | 47.8 | (201) |
| 1984 | 96.6 | 3.4 | (351) | 89.2 | 10.8 | (353) | 54.1 | 45.9 | (181) |
| Hispanic | | | | | | | | | |
| 1978 | 95.9 | 4.1* | (97) | 75.8 | 24.2 | (95) | 50.0 | 50.0 | (38) |
| 1983 | 96.4 | 3.6* | (166) | 78.7 | 21.3 | (164) | 44.2 | 55.8 | (77) |
| 1984 | 95.3 | 4.7* | (150) | 70.4 | 29.6 | (152) | 44.1 | 55.9 | (68) |
| White | | | | | | | | | |
| 1978 | 87.5 | 12.5 | (359) | 74.5 | 25.5 | (373) | 35.2 | 64.8 | (196) |
| 1983 | 95.4 | 4.6 | (505) | 70.9 | 29.1 | (478) | 41.5 | 58.5 | (253) |
| 1984 | 94.1 | 5.9 | (492) | 72.9 | 27.1 | (462) | 38.5 | 61.5 | (299) |
| All Non-Poor | | | | | | | | | |
| 1978 | 95.0 | 5.0 | (4,750) | 83.7 | 16.3 | (4,847) | 56.2 | 43.8 | (2,469) |
| 1983 | 96.4 | 3.6 | (4,212) | 88.4 | 11.6 | (4,457) | 61.4 | 38.6 | (2,420) |
| 1984 | 94.8 | 5.2 | (4,262) | 87.1 | 12.9 | (4,256) | 61.9 | 38.1 | (2,222) |

*≤ 10 cases

# Tables based on the Current Population Surveys of October

### Table 10: Percent Enrolled in School by Age
U.S. School-aged Children (Aged 3-18)
by Poverty, Family Characteristics, and Race; 1977, 1982, 1983

|  | 3-4 | (n) | 5-11 | (n) | 12-15 | (n) | 16-17 | (n) | 18 | (n) |
|---|---|---|---|---|---|---|---|---|---|---|
| **All Children** |  |  |  |  |  |  |  |  |  |  |
| 1977 | 32.8 | (4,473) | 98.9 | (17,917) | 99.2 | (11,825) | 89.5 | (6,166) | 56.9 | (3,114) |
| 1982 | 36.7 | (4,713) | 98.5 | (16,193) | 99.3 | (10,273) | 91.3 | (5,384) | 57.1 | (2,849) |
| 1983 | 37.7 | (5,276) | 98.5 | (17,065) | 99.3 | (11,014) | 92.5 | (5,515) | 58.4 | (3,000) |
| **Poverty Status** |  |  |  |  |  |  |  |  |  |  |
| Poor |  |  |  |  |  |  |  |  |  |  |
| 1977 | 25.7 | (901) | 98.1 | (3,353) | 98.3 | (2,009) | 81.6 | (931) | 46.2 | (416) |
| 1982 | 25.1 | (1,207) | 97.6 | (4,180) | 98.7 | (2,313) | 82.8 | (1,109) | 45.6 | (607) |
| 1983 | 25.2 | (1,477) | 97.8 | (4,400) | 99.0 | (2,491) | 87.0 | (1,236) | 45.5 | (670) |
| Non-Poor |  |  |  |  |  |  |  |  |  |  |
| 1977 | 34.6 | (3,210) | 99.0 | (13,013) | 99.5 | (8,666) | 91.4 | (4,564) | 60.1 | (2,240) |
| 1982 | 40.4 | (3,335) | 98.9 | (11,353) | 99.4 | (7,388) | 93.7 | (3,918) | 60.4 | (2,022) |
| 1983 | 42.9 | (3,637) | 98.8 | (12,050) | 99.3 | (7,999) | 94.0 | (3,986) | 61.8 | (2,188) |
| **Mother's Education** |  |  |  |  |  |  |  |  |  |  |
| Some High School or Less |  |  |  |  |  |  |  |  |  |  |
| All |  |  |  |  |  |  |  |  |  |  |
| 1977 | 22.0 | (1,238) | 98.2 | (5,157) | 98.7 | (3,665) | 83.8 | (1,872) | 48.5 | (807) |
| 1982 | 20.2 | (801) | 97.8 | (3,188) | 99.0 | (2,291) | 87.2 | (1,290) | 44.6 | (536) |
| 1983 | 20.6 | (903) | 98.4 | (3,289) | 98.6 | (2,298) | 87.5 | (1,172) | 47.4 | (624) |
| Poor |  |  |  |  |  |  |  |  |  |  |
| 1977 | 22.2 | (535) | 97.7 | (2,088) | 97.8 | (1,348) | 80.2 | (591) | 48.0 | (223) |
| 1982 | 18.7 | (465) | 97.3 | (1,799) | 99.6 | (1,132) | 82.6 | (592) | 44.9 | (243) |
| 1983 | 22.0 | (554) | 98.4 | (1,848) | 99.2 | (1,120) | 87.3 | (551) | 47.7 | (298) |
| Non-Poor |  |  |  |  |  |  |  |  |  |  |
| 1977 | 21.7 | (627) | 98.4 | (2,745) | 99.2 | (2,045) | 85.1 | (1,130) | 48.8 | (498) |
| 1982 | 22.4 | (313) | 98.4 | (1,286) | 99.3 | (1,070) | 91.3 | (647) | 43.7 | (268) |
| 1983 | 18.4 | (331) | 98.4 | (1,351) | 98.0 | (1,098) | 87.4 | (580) | 46.9 | (311) |
| High School Graduate |  |  |  |  |  |  |  |  |  |  |
| All |  |  |  |  |  |  |  |  |  |  |
| 1977 | 28.0 | (1,777) | 99.0 | (7,267) | 99.7 | (4,811) | 93.9 | (2,459) | 62.0 | (1,117) |
| 1982 | 30.6 | (1,714) | 98.8 | (6,193) | 99.5 | (3,922) | 94.6 | (2,051) | 59.5 | (1,033) |
| 1983 | 33.7 | (1,849) | 98.4 | (6,203) | 99.6 | (4,149) | 95.5 | (2,108) | 60.7 | (997) |
| Poor |  |  |  |  |  |  |  |  |  |  |
| 1977 | 28.2 | (262) | 98.7 | (849) | 99.3 | (459) | 89.2 | (212) | 59.7 | (77) |
| 1982 | 24.5 | (384) | 98.2 | (1,257) | 99.5 | (618) | 90.8 | (260) | 55.6 | (117) |
| 1983 | 27.7 | (471) | 97.2 | (1,304) | 99.4 | (720) | 91.0 | (321) | 51.7 | (120) |
| Non-Poor |  |  |  |  |  |  |  |  |  |  |
| 1977 | 27.6 | (1,415) | 99.0 | (5,926) | 99.8 | (3,952) | 94.2 | (2,010) | 62.5 | (913) |
| 1982 | 32.2 | (1,272) | 98.9 | (4,685) | 99.6 | (3,072) | 95.2 | (1,642) | 59.7 | (846) |
| 1983 | 35.9 | (1,334) | 98.7 | (4,699) | 99.7 | (3,227) | 96.3 | (1,657) | 61.6 | (823) |
| Some College or More |  |  |  |  |  |  |  |  |  |  |
| 1977 | 49.9 | (1,261) | 99.4 | (4,784) | 99.6 | (2,831) | 96.8 | (1,393) | 81.8 | (620) |
| 1982 | 52.7 | (1,485) | 99.0 | (4,709) | 99.6 | (2,779) | 96.6 | (1,251) | 82.4 | (625) |
| 1983 | 54.9 | (1,625) | 99.1 | (5,144) | 99.9 | (3,092) | 98.3 | (1,335) | 82.5 | (715) |

## U.S. School-aged Children (Aged 3-18) by Poverty, Family Characteristics, and Race; 1977, 1982, 1983

Cont'd.

| Family Structure | 3-4 | (n) | 5-11 | (n) | 12-15 | (n) | 16-17 | (n) | 18 | (n) |
|---|---|---|---|---|---|---|---|---|---|---|
| Both Parents | | | | | | | | | | |
| All | | | | | | | | | | |
| 1977 | 32.5 | (3,535) | 98.8 | (14,149) | 99.5 | (9,162) | 92.2 | (4,682) | 64.5 | (2,045) |
| 1982 | 37.3 | (3,290) | 98.7 | (11,198) | 99.4 | (7,031) | 94.2 | (3,633) | 63.3 | (1,734) |
| 1983 | 40.0 | (3,603) | 98.6 | (11,703) | 99.5 | (7,478) | 94.9 | (3,611) | 66.1 | (1,831) |
| Poor | | | | | | | | | | |
| 1977 | 20.3 | (429) | 97.2 | (1,632) | 98.2 | (956) | 83.8 | (438) | 54.7 | (137) |
| 1982 | 17.7 | (541) | 97.5 | (1,881) | 98.6 | (1,029) | 84.3 | (484) | 49.5 | (196) |
| 1983 | 22.8 | (661) | 97.8 | (1,955) | 99.7 | (1,073) | 89.8 | (499) | 49.8 | (239) |
| Non-Poor | | | | | | | | | | |
| 1977 | 34.1 | (2,922) | 98.9 | (11,573) | 99.6 | (7,451) | 93.0 | (3,087) | 66.0 | (1,698) |
| 1982 | 41.1 | (2,633) | 98.8 | (8,871) | 99.6 | (5,598) | 95.8 | (2,901) | 64.3 | (1,425) |
| 1983 | 44.0 | (2,827) | 98.8 | (9,310) | 99.5 | (6,033) | 95.7 | (2,899) | 68.3 | (1,500) |
| Mothers Only | | | | | | | | | | |
| All | | | | | | | | | | |
| 1977 | 33.9 | (741) | 99.3 | (3,060) | 99.0 | (2,144) | 87.1 | (1,043) | 54.3 | (501) |
| 1982 | 34.3 | (711) | 98.3 | (2,893) | 99.3 | (1,961) | 88.6 | (959) | 58.9 | (460) |
| 1983 | 33.7 | (774) | 98.6 | (2,936) | 99.2 | (2,065) | 91.9 | (1,004) | 55.8 | (505) |
| Poor | | | | | | | | | | |
| 1977 | 30.0 | (457) | 99.0 | (1,648) | 98.4 | (1,002) | 83.6 | (433) | 51.3 | (191) |
| 1982 | 30.2 | (431) | 97.9 | (1,626) | 99.3 | (944) | 85.9 | (433) | 52.6 | (194) |
| 1983 | 29.5 | (517) | 98.1 | (1,721) | 98.9 | (1,011) | 88.7 | (471) | 51.6 | (217) |
| Non-Poor | | | | | | | | | | |
| 1977 | 42.4 | (238) | 99.6 | (1,224) | 99.5 | (987) | 89.9 | (523) | 55.6 | (266) |
| 1982 | 40.5 | (262) | 99.0 | (1,189) | 99.1 | (936) | 90.5 | (482) | 65.5 | (238) |
| 1983 | 42.7 | (246) | 99.3 | (1,144) | 99.4 | (981) | 94.6 | (499) | 57.7 | (267) |
| Fathers Only | | | | | | | | | | |
| All | | | | | | | | | | |
| 1977 | 30.6 | (72) | 98.1 | (319) | 98.8 | (257) | 82.0 | (178) | 52.0 | (102) |
| 1982 | 32.4 | (68) | 99.2 | (261) | 100.0 | (259) | 92.7 | (164) | 58.4 | (77) |
| 1983 | 35.9 | (62) | 97.9 | (291) | 100.0 | (263) | 89.7 | (175) | 55.7 | (97) |
| Poor | | | | | | | | | | |
| 1977 | 50.0 | (14) | 97.2 | (72) | 100.0 | (40) | 70.0 | (20) | 75.0 | (12) |
| 1982 | 44.0 | (25) | 97.2 | (71) | 100.0 | (57) | 91.3 | (23) | 47.1 | (17) |
| 1983 | 30.2 | (18) | 98.3 | (58) | 99.5 | (58) | 80.6 | (31) | 50.0 | (12) |
| Non-Poor | | | | | | | | | | |
| 1977 | 30.0 | (50) | 99.1 | (216) | 99.5 | (193) | 86.4 | (132) | 50.6 | (81) |
| 1982 | 24.4 | (41) | 99.4 | (174) | 100.0 | (190) | 92.0 | (125) | 63.2 | (57) |
| 1983 | 41.2 | (41) | 97.7 | (217) | 100.0 | (189) | 92.0 | (137) | 53.8 | (80) |

### U.S. School-aged Children (Aged 3-18)
### by Poverty, Family Characteristics, and Race; 1977, 1982, 1983
### Cont'd.

| Mother's Employment | 3-4 | (n) | 5-11 | (n) | 12-15 | (n) | 16-17 | (n) | 18 | (n) |
|---|---|---|---|---|---|---|---|---|---|---|
| Full Time | | | | | | | | | | |
| All | | | | | | | | | | |
| 1977 | 40.6 | (1,100) | 99.1 | (4,947) | 99.4 | (3,916) | 91.1 | (2.094) | 62.7 | (958) |
| 1982 | 39.1 | (1,055) | 98.8 | (4,611) | 99.5 | (3,464) | 93.7 | (1,892) | 63.9 | (902) |
| 1983 | 43.6 | (1,286) | 99.1 | (4,849) | 99.7 | (3,844) | 95.3 | (1,942) | 62.7 | (1,043) |
| Poor | | | | | | | | | | |
| 1977 | 26.3 | (167) | 98.6 | (623) | 98.5 | (469) | 82.9 | (199) | 59.5 | (74) |
| 1982 | 20.5 | (146) | 97.8 | (676) | 99.8 | (442) | 87.3 | (213) | 58.7 | (92) |
| 1983 | 30.7 | (192) | 99.2 | (746) | 99.4 | (486) | 89.3 | (253) | 49.6 | (123) |
| Non-Poor | | | | | | | | | | |
| 1977 | 43.1 | (885) | 99.2 | (4.011) | 99.6 | (3,142) | 92.1 | (1,715) | 63.1 | (803) |
| 1982 | 42.1 | (872) | 99.0 | (3,738) | 99.5 | (2,847) | 94.6 | (1,561) | 64.2 | (751) |
| 1983 | 46.0 | (1,074) | 99.2 | (3,959) | 99.7 | (3,195) | 96.1 | (1,602) | 64.3 | (873) |
| Part Time | | | | | | | | | | |
| All | | | | | | | | | | |
| 1977 | 40.1 | (539) | 99.5 | (2,685) | 99.6 | (1,977) | 93.7 | (958) | 65.5 | (406) |
| 1982 | 43.3 | (689) | 99.1 | (2,568) | 99.3 | (1,674) | 95.2 | (816) | 68.5 | (403) |
| 1983 | 43.3 | (720) | 98.8 | (2,701) | 99.6 | (1,811) | 96.4 | (853) | 71.6 | (395) |
| Poor | | | | | | | | | | |
| 1977 | 35.1 | (74) | 99.2 | (383) | 98.6 | (213) | 82.7 | (98) | 52.5 | (40) |
| 1982 | 25.2 | (103) | 98.2 | (435) | 97.4 | (274) | 85.0 | (140) | 56.6 | (76) |
| 1983 | 25.1 | (134) | 98.2 | (490) | 99.6 | (284) | 93.8 | (130) | 57.6 | (66) |
| Non-Poor | | | | | | | | | | |
| 1977 | 40.9 | (443) | 99.5 | (2,139) | 99.7 | (1,614) | 94.8 | (765) | 67.4 | (328) |
| 1982 | 45.9 | (564) | 99.3 | (2,037) | 99.5 | (1,304) | 97.3 | (632) | 70.5 | (305) |
| 1983 | 48.1 | (570) | 99.0 | (2,133) | 99.6 | (1,464) | 96.9 | (667) | 74.5 | (314) |
| Unemployed | | | | | | | | | | |
| All | | | | | | | | | | |
| 1977 | 29.0 | (214) | 98.4 | (755) | 99.7 | (387) | 87.7 | (179) | 59.7 | (77) |
| 1982 | 27.5 | (265) | 98.3 | (986) | 99.6 | (569) | 91.1 | (248) | 59.3 | (113) |
| 1983 | 32.8 | (267) | 98.4 | (868) | 98.8 | (434) | 93.5 | (185) | 55.1 | (89) |
| Poor | | | | | | | | | | |
| 1977 | 31.0 | (87) | 98.1 | (259) | 100.0 | (121) | 78.2 | (55) | 52.2 | (23) |
| 1982 | 24.2 | (132) | 97.2 | (424) | 99.2 | (244) | 86.1 | (79) | 50.0 | (28) |
| 1983 | 25.9 | (134) | 97.6 | (467) | 98.6 | (214) | 92.4 | (92) | 45.7 | (35) |
| Non-Poor | | | | | | | | | | |
| 1977 | 27.6 | (116) | 98.5 | (456) | 99.6 | (232) | 92.2 | (115) | 62.2 | (45) |
| 1982 | 31.5 | (130) | 99.1 | (544) | 100.0 | (309) | 92.1 | (152) | 62.0 | (79) |
| 1983 | 37.0 | (127) | 99.2 | (393) | 100.0 | (211) | 94.4 | (89) | 59.6 | (52) |
| Not in Labor Force | | | | | | | | | | |
| All | | | | | | | | | | |
| 1977 | 27.8 | (2,423) | 98.6 | (8,821) | 99.2 | (5,026) | 90.7 | (2,493) | 61.5 | (1,103) |
| 1982 | 34.4 | (1,993) | 98.4 | (5,927) | 99.3 | (3,284) | 91.6 | (1,637) | 58.0 | (777) |
| 1983 | 35.2 | (2,105) | 98.2 | (6,218) | 99.2 | (3,451) | 92.0 | (1,635) | 62.5 | (808) |

U.S. School-aged Children (Aged 3-18)
by Poverty, Family Characteristics, and Race; 1977, 1982, 1983
Cont'd.

|  | 3-4 | (n) | 5-11 | (n) | 12-15 | (n) | 16-17 | (n) | 18 | (n) |
|---|---|---|---|---|---|---|---|---|---|---|
| Not in Labor Force (cont'd.) |  |  |  |  |  |  |  |  |  |  |
| Poor |  |  |  |  |  |  |  |  |  |  |
| 1977 | 22.9 | (558) | 97.7 | (2,016) | 98.0 | (1,156) | 84.8 | (519) | 49.7 | (191) |
| 1982 | 23.5 | (592) | 97.7 | (1,971) | 98.9 | (1,012) | 83.7 | (486) | 45.4 | (194) |
| 1983 | 24.5 | (718) | 97.5 | (1,974) | 99.4 | (1,096) | 87.4 | (494) | 50.2 | (231) |
| Non-Poor |  |  |  |  |  |  |  |  |  |  |
| 1977 | 29.3 | (1,716) | 98.7 | (6,192) | 99.6 | (3,449) | 92.2 | (1,736) | 65.0 | (789) |
| 1982 | 39.1 | (1,329) | 98.7 | (3,742) | 99.5 | (2,075) | 94.9 | (1,037) | 61.6 | (529) |
| 1983 | 41.1 | (1,303) | 98.5 | (3,966) | 99.1 | (2,143) | 93.8 | (1,040) | 66.7 | (529) |
| Race/Ethnicity |  |  |  |  |  |  |  |  |  |  |
| Black |  |  |  |  |  |  |  |  |  |  |
| All |  |  |  |  |  |  |  |  |  |  |
| 1977 | 35.9 | (683) | 99.0 | (2,650) | 99.2 | (1,681) | 91.8 | (850) | 63.4 | (407) |
| 1982 | 38.7 | (702) | 98.7 | (2,400) | 99.4 | (1,490) | 92.7 | (776) | 55.9 | (399) |
| 1983 | 36.4 | (804) | 98.3 | (2,529) | 99.1 | (1,596) | 93.5 | (813) | 57.5 | (466) |
| Poor |  |  |  |  |  |  |  |  |  |  |
| 1977 | 33.0 | (352) | 98.5 | (1,363) | 98.8 | (759) | 87.8 | (384) | 55.6 | (178) |
| 1982 | 33.1 | (393) | 98.4 | (1,324) | 99.3 | (758) | 90.2 | (398) | 54.7 | (212) |
| 1983 | 31.6 | (474) | 97.9 | (1,372) | 98.7 | (835) | 92.5 | (438) | 54.9 | (246) |
| Non-Poor |  |  |  |  |  |  |  |  |  |  |
| 1977 | 41.8 | (268) | 99.4 | (1,071) | 99.5 | (786) | 95.6 | (390) | 72.4 | (174) |
| 1982 | 44.8 | (290) | 99.3 | (973) | 99.4 | (657) | 95.8 | (332) | 56.2 | (169) |
| 1983 | 45.5 | (298) | 98.6 | (1,083) | 99.7 | (705) | 94.8 | (347) | 59.3 | (204) |
| Hispanic |  |  |  |  |  |  |  |  |  |  |
| All |  |  |  |  |  |  |  |  |  |  |
| 1977 | 20.2 | (337) | 97.9 | (1,190) | 98.8 | (681) | 83.7 | (381) | 51.0 | (198) |
| 1982 | 22.2 | (405) | 97.3 | (1,498) | 98.4 | (856) | 86.1 | (423) | 45.6 | (215) |
| 1983 | 23.8 | (485) | 98.6 | (1,600) | 98.3 | (941) | 89.6 | (424) | 53.0 | (215) |
| Poor |  |  |  |  |  |  |  |  |  |  |
| 1977 | 15.3 | (111) | 97.9 | (430) | 98.8 | (252) | 83.1 | (118) | 40.8 | (49) |
| 1982 | 19.3 | (187) | 96.3 | (708) | 97.3 | (415) | 82.3 | (181) | 43.0 | (93) |
| 1983 | 19.8 | (236) | 98.4 | (748) | 99.1 | (437) | 87.0 | (192) | 53.3 | (92) |
| Non-Poor |  |  |  |  |  |  |  |  |  |  |
| 1977 | 20.0 | (195) | 97.6 | (666) | 98.7 | (383) | 85.2 | (236) | 54.2 | (118) |
| 1982 | 25.4 | (209) | 98.4 | (747) | 99.2 | (399) | 89.6 | (221) | 47.2 | (106) |
| 1983 | 28.2 | (232) | 98.7 | (795) | 97.9 | (468) | 92.7 | (218) | 53.4 | (118) |
| White |  |  |  |  |  |  |  |  |  |  |
| All |  |  |  |  |  |  |  |  |  |  |
| 1977 | 33.0 | (3,341) | 98.9 | (13,714) | 99.3 | (9,256) | 89.5 | (4,840) | 56.1 | (2,460) |
| 1982 | 37.9 | (3,456) | 98.6 | (11,742) | 99.4 | (7,624) | 91.4 | (4,037) | 58.0 | (2,164) |
| 1983 | 39.5 | (3,802) | 98.6 | (12,329) | 99.4 | (8,134) | 92.5 | (4,123) | 59.1 | (2,235) |
| Poor |  |  |  |  |  |  |  |  |  |  |
| 1977 | 21.5 | (418) | 97.7 | (1,491) | 98.3 | (947) | 74.8 | (408) | 37.0 | (181) |
| 1982 | 20.7 | (584) | 97.4 | (1,976) | 98.8 | (1,056) | 76.4 | (487) | 38.4 | (281) |
| 1983 | 22.9 | (711) | 97.6 | (2,059) | 99.2 | (1,116) | 82.1 | (563) | 35.4 | (308) |
| Non-Poor |  |  |  |  |  |  |  |  |  |  |
| 1977 | 34.5 | (2,666) | 99.0 | (11,024) | 99.5 | (7,376) | 91.3 | (3,879) | 59.3 | (1,913) |
| 1982 | 41.1 | (2,732) | 98.9 | (9,288) | 99.5 | (6,123) | 93.7 | (3,270) | 61.3 | (1,701) |
| 1983 | 43.4 | (2,986) | 98.9 | (9,815) | 99.4 | (6,615) | 93.9 | (3,321) | 62.4 | (1,816) |

Table 11: Percent Distribution on Grade Placement
U.S. School-aged Children (Aged 5-18) Enrolled in School
by Poverty, Family Characteristics, and Race; 1977, 1982, 1983

| | K | 1-3 | 4-6 | 7-9 | 10-12 | Post H. S. | (n) |
|---|---|---|---|---|---|---|---|
| **All Children** | | | | | | | |
| 1977 | 6.4 | 21.8 | 21.2 | 24.3 | 22.5 | 3.6 | (36,709) |
| 1982 | 7.2 | 21.3 | 22.4 | 23.4 | 22.0 | 3.7 | (32,648) |
| 1983 | 7.3 | 21.8 | 21.5 | 24.2 | 21.5 | 3.7 | (34,586) |
| **Poverty Status** | | | | | | | |
| Poor | | | | | | | |
| 1977 | 7.4 | 24.7 | 24.1 | 24.3 | 18.2 | 1.3 | (6,209) |
| 1982 | 8.3 | 25.2 | 24.4 | 22.9 | 17.7 | 1.5 | (7,515) |
| 1983 | 8.2 | 24.7 | 23.8 | 24.0 | 17.7 | 1.6 | (8,134) |
| Non-Poor | | | | | | | |
| 1977 | 6.3 | 21.5 | 20.8 | 24.2 | 23.2 | 4.0 | (27,021) |
| 1982 | 6.9 | 20.3 | 22.1 | 23.4 | 23.0 | 4.2 | (23,464) |
| 1983 | 7.2 | 21.0 | 21.0 | 31.9 | 22.5 | 4.2 | (24,952) |
| **Mother's Education** | | | | | | | |
| Some High School or Less | | | | | | | |
| All | | | | | | | |
| 1977 | 5.9 | 21.8 | 22.6 | 26.1 | 21.9 | 1.6 | (10,622) |
| 1982 | 6.6 | 21.2 | 22.1 | 25.8 | 23.0 | 1.4 | (6,716) |
| 1983 | 6.3 | 22.0 | 22.6 | 26.1 | 21.3 | 1.8 | (6,790) |
| Poor | | | | | | | |
| 1977 | 6.7 | 24.4 | 24.5 | 25.6 | 17.9 | 0.8 | (3,928) |
| 1982 | 7.5 | 24.3 | 23.4 | 24.8 | 19.4 | 0.7 | (3,437) |
| 1983 | 7.7 | 24.1 | 23.7 | 24.9 | 18.5 | 1.1 | (3,540) |
| Non-Poor | | | | | | | |
| 1977 | 5.3 | 20.5 | 21.9 | 26.2 | 24.0 | 2.1 | (5,921) |
| 1982 | 5.8 | 17.7 | 20.7 | 26.6 | 27.2 | 2.0 | (3,027) |
| 1983 | 4.9 | 19.5 | 21.3 | 27.3 | 24.5 | 2.5 | (3,040) |
| High School Graduate | | | | | | | |
| All | | | | | | | |
| 1977 | 6.2 | 21.5 | 20.9 | 24.2 | 23.3 | 3.9 | (14,986) |
| 1982 | 6.5 | 20.8 | 22.9 | 22.6 | 23.4 | 3.7 | (12,548) |
| 1983 | 7.0 | 20.8 | 21.6 | 24.2 | 22.7 | 3.7 | (12,865) |
| Poor | | | | | | | |
| 1977 | 8.5 | 25.1 | 23.0 | 22.9 | 18.3 | 2.1 | (1,536) |
| 1982 | 8.0 | 26.6 | 26.0 | 20.5 | 17.4 | 1.5 | (2,151) |
| 1983 | 7.9 | 25.4 | 24.9 | 23.7 | 16.9 | 1.2 | (2,335) |
| Non-Poor | | | | | | | |
| 1977 | 6.0 | 21.5 | 20.8 | 24.4 | 23.4 | 4.0 | (12,268) |
| 1982 | 6.4 | 19.9 | 22.5 | 23.0 | 24.2 | 4.0 | (9,737) |
| 1983 | 7.0 | 20.0 | 21.1 | 24.1 | 23.7 | 4.1 | (9,971) |
| Some College or More | | | | | | | |
| 1977 | 7.5 | 22.7 | 20.9 | 22.3 | 21.5 | 5.1 | (9,470) |
| 1982 | 7.9 | 21.7 | 22.4 | 23.0 | 19.7 | 5.3 | (9,183) |
| 1983 | 8.2 | 22.4 | 20.7 | 23.4 | 20.1 | 5.2 | (10,097) |

Table 11: Percent Distribution on Grade Placement
U.S. School-aged Children (Aged 5-18) Enrolled in School
by Poverty, Family Characteristics, and Race; 1977, 1982, 1983
Cont'd.

|  | K | 1-3 | 4-6 | 7-9 | 10-12 | Post H.S. | (n) |
|---|---|---|---|---|---|---|---|
| Family Structure |  |  |  |  |  |  |  |
| Both Parents |  |  |  |  |  |  |  |
| All |  |  |  |  |  |  |  |
| 1977 | 6.4 | 22.0 | 21.3 | 24.1 | 22.5 | 3.7 | (28,735) |
| 1982 | 7.2 | 21.3 | 22.3 | 23.1 | 22.3 | 4.0 | (23,547) |
| 1983 | 7.6 | 21.6 | 21.3 | 23.9 | 21.6 | 4.0 | (23,627) |
| Poor |  |  |  |  |  |  |  |
| 1977 | 6.4 | 26.1 | 24.2 | 24.3 | 17.8 | 1.2 | (2,964) |
| 1982 | 8.2 | 26.2 | 24.1 | 22.6 | 17.6 | 1.3 | (3,338) |
| 1983 | 8.7 | 24.8 | 24.2 | 23.2 | 17.9 | 1.3 | (3,546) |
| Non-Poor |  |  |  |  |  |  |  |
| 1977 | 6.5 | 21.8 | 21.1 | 24.0 | 22.6 | 4.0 | (23,550) |
| 1982 | 7.2 | 20.7 | 22.2 | 23.0 | 22.8 | 4.3 | (18.044) |
| 1983 | 7.5 | 21.2 | 21.0 | 23.8 | 22.1 | 4.4 | (19,002) |
| Mothers Only |  |  |  |  |  |  |  |
| All |  |  |  |  |  |  |  |
| 1977 | 6.8 | 21.7 | 21.8 | 25.2 | 21.9 | 2.6 | (6,342) |
| 1982 | 6.1 | 21.0 | 23.6 | 25.1 | 21.5 | 2.5 | (5,901) |
| 1983 | 6.0 | 21.5 | 22.3 | 26.2 | 21.2 | 2.8 | (6,130) |
| Poor |  |  |  |  |  |  |  |
| 1977 | 8.4 | 23.6 | 24.2 | 24.3 | 18.2 | 1.3 | (3,076) |
| 1982 | 7.3 | 24.5 | 25.2 | 23.7 | 18.2 | 1.1 | (2,988) |
| 1983 | 7.2 | 25.4 | 23.9 | 25.2 | 16.9 | 1.4 | (3,204) |
| Non-Poor |  |  |  |  |  |  |  |
| 1977 | 5.3 | 20.2 | 19.5 | 26.0 | 25.1 | 3.9 | (2,820) |
| 1982 | 5.0 | 15.9 | 20.0 | 24.0 | 22.1 | 3.8 | (2,699) |
| 1983 | 4.8 | 17.3 | 20.7 | 26.9 | 25.9 | 4.2 | (2,732) |
| Fathers Only |  |  |  |  |  |  |  |
| All |  |  |  |  |  |  |  |
| 1977 | 5.9 | 18.5 | 18.0 | 26.8 | 26.7 | 4.0 | (761) |
| 1982 | 4.4 | 14.9 | 18.6 | 29.4 | 29.0 | 3.7 | (710) |
| 1983 | 6.0 | 15.4 | 19.7 | 26.1 | 29.1 | 3.7 | (761) |
| Poor |  |  |  |  |  |  |  |
| 1977 | 8.6 | 26.8 | 23.7 | 26.1 | 13.1 | 1.6 | (132) |
| 1982 | 6.0 | 20.3 | 21.7 | 31.3 | 20.6 | 0.0 | (154) |
| 1983 | 5.3 | 18.5 | 22.7 | 29.8 | 22.8 | .9 | (147) |
| Non-Poor |  |  |  |  |  |  |  |
| 1977 | 5.6 | 16.0 | 17.3 | 27.4 | 28.9 | 4.8 | (557) |
| 1982 | 3.9 | 13.3 | 18.0 | 29.3 | 30.8 | 4.8 | (510) |
| 1983 | 6.5 | 14.3 | 19.0 | 24.9 | 31.1 | 4.2 | (572) |
| Race/Ethnicity |  |  |  |  |  |  |  |
| Black |  |  |  |  |  |  |  |
| All |  |  |  |  |  |  |  |
| 1977 | 6.8 | 22.7 | 21.8 | 23.9 | 22.3 | 2.5 | (5,342) |
| 1982 | 7.5 | 22.4 | 23.1 | 23.2 | 21.6 | 2.2 | (4,801) |
| 1983 | 7.0 | 22.8 | 22.0 | 24.0 | 21.9 | 2.3 | (5,111) |

## Table 11: Percent Distribution on Grade Placement
U.S. School-aged Children (Aged 5-18) Enrolled in School
by Poverty, Family Characteristics, and Race; 1977, 1982, 1983
Cont'd.

| | K | 1-3 | 4-6 | 7-9 | 10-12 | Post H.S. | (n) |
|---|---|---|---|---|---|---|---|
| Black (cont'd.) | | | | | | | |
| Poor | | | | | | | |
| 1977 | 6.9 | 25.1 | 23.6 | 22.8 | 20.0 | 1.6 | (2,526) |
| 1982 | 7.9 | 23.4 | 24.2 | 22.7 | 20.6 | 1.3 | (2,528) |
| 1983 | 6.9 | 23.5 | 23.4 | 23.4 | 21.2 | 1.6 | (2,714) |
| Non-Poor | | | | | | | |
| 1977 | 6.9 | 20.2 | 20.4 | 25.1 | 24.1 | 3.3 | (2,367) |
| 1982 | 6.9 | 21.0 | 22.5 | 23.8 | 22.4 | 3.5 | (2,043) |
| 1983 | 7.0 | 22.1 | 20.5 | 24.8 | 22.4 | 3.1 | (2,232) |
| Hispanic | | | | | | | |
| All | | | | | | | |
| 1977 | 7.2 | 23.6 | 22.9 | 23.1 | 20.6 | 2.5 | (2,255) |
| 1982 | 8.4 | 24.6 | 23.5 | 22.6 | 18.9 | 1.9 | (2,774) |
| 1983 | 8.4 | 24.0 | 23.8 | 24.3 | 17.7 | 1.9 | (3,009) |
| Poor | | | | | | | |
| 1977 | 7.2 | 25.1 | 25.0 | 24.0 | 17.3 | 1.3 | (792) |
| 1982 | 8.2 | 27.0 | 23.7 | 22.6 | 17.2 | 1.3 | (1,278) |
| 1983 | 9.1 | 24.4 | 24.4 | 24.9 | 16.0 | 1.2 | (1,390) |
| Non-Poor | | | | | | | |
| 1977 | 6.7 | 23.1 | 21.6 | 22.8 | 22.7 | 3.2 | (1,292) |
| 1982 | 9.0 | 23.1 | 23.1 | 22.0 | 20.3 | 2.5 | (1,386) |
| 1983 | 7.8 | 23.4 | 23.1 | 23.8 | 19.5 | 2.4 | (1,511) |
| White | | | | | | | |
| All | | | | | | | |
| 1977 | 6.3 | 21.5 | 21.0 | 24.5 | 22.8 | 3.9 | (28,421) |
| 1982 | 6.9 | 20.6 | 22.1 | 23.7 | 22.5 | 4.2 | (24,037) |
| 1983 | 7.3 | 21.2 | 21.2 | 24.2 | 22.0 | 4.2 | (25,331) |
| Poor | | | | | | | |
| 1977 | 7.7 | 24.4 | 24.2 | 26.0 | 16.7 | 1.0 | (2,755) |
| 1982 | 8.5 | 25.5 | 25.1 | 23.6 | 15.7 | 1.6 | (3,410) |
| 1983 | 8.7 | 25.2 | 24.0 | 24.2 | 16.0 | 1.8 | (3,658) |
| Non-Poor | | | | | | | |
| 1977 | 6.2 | 21.4 | 20.8 | 24.2 | 23.2 | 4.1 | (22,904) |
| 1982 | 6.8 | 20.0 | 21.9 | 23.5 | 23.4 | 4.4 | (19,349) |
| 1983 | 7.1 | 20.7 | 20.8 | 24.1 | 22.8 | 4.5 | (20,515) |

## Table 12: Percent Enrolled in Public Versus Private Schools
U.S. School-aged Children (Aged 3-18) Enrolled in School
by Poverty, Family Characteristics, and Race; 1977, 1982, 1983

| | Public | Private | (n) |
|---|---|---|---|
| All Children | | | |
| 1977 | 87.3 | 12.7 | (38,196) |
| 1982 | 86.5 | 13.5 | (34,423) |
| 1983 | 88.7 | 11.3 | (34,603) |
| Poverty Status | | | |
| Poor | | | |
| 1977 | 95.6 | 4.4 | (6,447) |
| 1982 | 95.2 | 4.8 | (7,859) |
| 1983 | 95.2 | 4.8 | (8,153) |
| Non-Poor | | | |
| 1977 | 85.4 | 14.6 | (28,130) |
| 1982 | 83.9 | 16.1 | (24,815) |
| 1983 | 86.8 | 13.2 | (24,951) |
| Mother's Education | | | |
| Some High School or Less | | | |
| All | | | |
| 1977 | 94.2 | 5.8 | (10,916) |
| 1982 | 94.4 | 5.6 | (6,910) |
| 1983 | 94.2 | 5.8 | (6,823) |
| Poor | | | |
| 1977 | 97.3 | 2.7 | (4,057) |
| 1982 | 96.9 | 3.1 | (3,551) |
| 1983 | 96.6 | 3.4 | (3,551) |
| Non-Poor | | | |
| 1977 | 92.7 | 7.3 | (6,072) |
| 1982 | 91.7 | 8.3 | (3,105) |
| 1983 | 91.3 | 8.7 | (3,060) |
| High School Graduate | | | |
| All | | | |
| 1977 | 86.4 | 13.6 | (15,493) |
| 1982 | 87.6 | 12.4 | (13,101) |
| 1983 | 89.2 | 10.8 | (12,855) |
| Poor | | | |
| 1977 | 93.4 | 6.6 | (1,603) |
| 1982 | 94.7 | 5.3 | (2,244) |
| 1983 | 95.0 | 5.0 | (2,337) |
| Non-Poor | | | |
| 1977 | 85.5 | 14.5 | (12,667) |
| 1982 | 86.3 | 13.7 | (10,173) |
| 1983 | 88.0 | 12.0 | (9,959) |
| Some College or More | | | |
| 1977 | 80.5 | 19.5 | (10,061) |
| 1982 | 78.2 | 21.8 | (9,935) |
| 1983 | 83.0 | 17.0 | (10,087) |

### Table 12: Percent Enrolled in Public Versus Private Schools
U.S. School-aged Children (Aged 3-18) Enrolled in School
by Poverty, Family Characteristics, and Race; 1977, 1982, 1983
Cont'd.

| | Public | Private | (n) |
|---|---|---|---|
| **Family Structure** | | | |
| Both Parents | | | |
| All | | | |
| 1977 | 86.2 | 13.8 | (29,878) |
| 1982 | 84.5 | 15.5 | (23,791) |
| 1983 | 87.1 | 12.9 | (23,620) |
| Poor | | | |
| 1977 | 95.5 | 4.5 | (3,054) |
| 1982 | 94.1 | 5.9 | (3,449) |
| 1983 | 94.6 | 5.4 | (3,549) |
| Non-Poor | | | |
| 1977 | 85.1 | 14.9 | (24,531) |
| 1982 | 82.9 | 17.1 | (19,126) |
| 1983 | 86.0 | 14.0 | (18,999) |
| Mothers Only | | | |
| All | | | |
| 1977 | 91.4 | 8.6 | (6,592) |
| 1982 | 92.1 | 7.9 | (6,157) |
| 1983 | 92.6 | 7.4 | (6,149) |
| Poor | | | |
| 1977 | 95.4 | 4.6 | (3,215) |
| 1982 | 96.4 | 3.6 | (3,133) |
| 1983 | 96.3 | 3.7 | (3,218) |
| Non-Poor | | | |
| 1977 | 87.0 | 13.0 | (2,919) |
| 1982 | 87.5 | 12.5 | (2,804) |
| 1983 | 88.2 | 11.8 | (2,737) |
| Fathers Only | | | |
| All | | | |
| 1977 | 89.8 | 10.2 | (787) |
| 1982 | 89.6 | 10.4 | (737) |
| 1983 | 90.5 | 9.5 | (760) |
| Poor | | | |
| 1977 | 100.0 | 0.0 | (140) |
| 1982 | 94.6 | 5.4 | (166) |
| 1983 | 94.2 | 5.8 | (147) |
| Non-Poor | | | |
| 1977 | 87.3 | 12.7 | (576) |
| 1982 | 88.5 | 11.5 | (523) |
| 1983 | 89.2 | 10.8 | (570) |

Table 12: Percent Enrolled in Public Versus Private Schools
U.S. School-aged Children (Aged 3-18) Enrolled in School
by Poverty, Family Characteristics, and Race; 1977, 1982, 1983
Cont'd.

| Race/Ethnicity | Public | Private | (n) |
|---|---|---|---|
| Black | | | |
| All | | | |
| 1977 | 94.1 | 5.9 | (5,574) |
| 1982 | 93.3 | 6.7 | (5,064) |
| 1983 | 94.8 | 5.2 | (5,096) |
| Poor | | | |
| 1977 | 97.3 | 2.7 | (2,645) |
| 1982 | 97.2 | 2.7 | (2,662) |
| 1983 | 97.6 | 2.4 | (2,707) |
| Non-Poor | | | |
| 1977 | 90.5 | 9.5 | (2,459) |
| 1982 | 89.0 | 11.0 | (2,162) |
| 1983 | 91.6 | 8.4 | (2,221) |
| Hispanic | | | |
| All | | | |
| 1977 | 88.0 | 12.0 | (2,325) |
| 1982 | 90.2 | 9.8 | (2,854) |
| 1983 | 91.3 | 8.7 | (2,997) |
| Poor | | | |
| 1977 | 93.8 | 6.3 | (805) |
| 1982 | 96.3 | 3.7 | (1,311) |
| 1983 | 96.0 | 4.0 | (1,384) |
| Non-Poor | | | |
| 1977 | 84.2 | 15.8 | (1,332) |
| 1982 | 84.9 | 15.1 | (1,432) |
| 1983 | 87.5 | 12.5 | (1,508) |
| White | | | |
| All | | | |
| 1977 | 86.0 | 14.0 | (29,564) |
| 1982 | 84.6 | 15.4 | (25,415) |
| 1983 | 87.1 | 12.9 | (25,378) |
| Poor | | | |
| 1977 | 94.5 | 5.5 | (2,851) |
| 1982 | 93.2 | 6.8 | (3,568) |
| 1983 | 92.9 | 7.1 | (3,686) |
| Non-Poor | | | |
| 1977 | 85.0 | 15.0 | (23,849) |
| 1982 | 83.2 | 16.8 | (20,500) |
| 1983 | 86.2 | 13.8 | (20,531) |

### Table 13: Percent Distribution on Modal Grade Placement
U.S. School-aged Children (aged 5-17) Enrolled in School
by Poverty, Family Characteristics, and Race; 1977, 1982, 1983.

| | 3+ Years Behind | 2 Years Behind | 1 Year Behind | At Grade Level | 1 Year Ahead | 2+ Years Ahead | (N) |
|---|---|---|---|---|---|---|---|
| **All Children** | | | | | | | |
| 1977 | .3 | 1.7 | 15.0 | 73.8 | 8.9 | .4 | (34,729) |
| 1982 | .4 | 2.3 | 18.1 | 71.0 | 7.7 | .4 | (30,822) |
| 1983 | .5 | 2.6 | 18.1 | 70.6 | 7.7 | .4 | (32,538) |
| **Poverty Status** | | | | | | | |
| Poor | | | | | | | |
| 1977 | 1.0 | 4.1 | 23.3 | 63.6 | 7.9 | .2 | (5,964) |
| 1982 | 1.0 | 5.0 | 26.6 | 61.4 | 5.6 | .4 | (7,189) |
| 1983 | 1.2 | 6.0 | 25.9 | 60.4 | 6.1 | .5 | (7,762) |
| Non-Poor | | | | | | | |
| 1977 | .2 | 1.1 | 13.1 | 76.3 | 8.9 | .4 | (25,519) |
| 1982 | .3 | 1.4 | 15.4 | 74.2 | 8.3 | .4 | (22,096) |
| 1983 | .3 | 1.6 | 15.6 | 74.1 | 8.1 | .4 | (23,382) |
| **Mother's Education** | | | | | | | |
| Some High School or Less | | | | | | | |
| All | | | | | | | |
| 1977 | .8 | 3.6 | 22.5 | 65.5 | 7.3 | .3 | (10,174) |
| 1982 | 1.0 | 5.3 | 27.7 | 59.3 | 6.3 | .3 | (6,448) |
| 1983 | 1.1 | 5.4 | 26.7 | 59.8 | 6.6 | .4 | (6,456) |
| Poor | | | | | | | |
| 1977 | 1.2 | 5.3 | 25.7 | 60.3 | 7.3 | .1 | (3,793) |
| 1982 | 1.3 | 6.5 | 31.3 | 55.3 | 5.1 | .4 | (3,312) |
| 1983 | 1.7 | 7.2 | 29.7 | 55.0 | 5.9 | .6 | (3,367) |
| Non-Poor | | | | | | | |
| 1977 | .5 | 2.4 | 20.5 | 69.0 | 7.1 | .4 | (5,658) |
| 1982 | .6 | 3.6 | 23.8 | 64.0 | 7.7 | .3 | (2,899) |
| 1983 | .5 | 3.5 | 22.5 | 66.1 | 7.4 | .2 | (2,884) |
| High School Graduate | | | | | | | |
| All | | | | | | | |
| 1977 | .1 | 1.1 | 12.3 | 77.0 | 9.1 | .4 | (14,213) |
| 1982 | .2 | 1.4 | 15.9 | 74.4 | 7.7 | .3 | (11,880) |
| 1983 | .2 | 1.9 | 16.9 | 73.6 | 7.0 | .4 | (12,163) |
| Poor | | | | | | | |
| 1977 | .6 | 1.9 | 19.8 | 68.8 | 8.4 | .4 | (1,469) |
| 1982 | .5 | 3.1 | 22.1 | 68.1 | 6.1 | .2 | (2,072) |
| 1983 | .3 | 4.7 | 23.1 | 65.4 | 6.3 | .2 | (2,254) |
| Non-Poor | | | | | | | |
| 1977 | .1 | .9 | 11.3 | 78.3 | 9.1 | .4 | (11,638) |
| 1982 | .2 | 1.1 | 14.7 | 75.8 | 7.9 | .3 | (9,193) |
| 1983 | .2 | 1.3 | 15.7 | 75.4 | 7.1 | .4 | (9,387) |
| Some College or More | | | | | | | |
| 1977 | .1 | .6 | 9.9 | 78.8 | 10.3 | .4 | (8,869) |
| 1982 | .1 | .7 | 12.7 | 76.9 | 9.1 | .5 | (8,587) |
| 1983 | .2 | 1.0 | 12.8 | 76.5 | 9.0 | .4 | (9,393) |

### Table 13: Percent Distribution on Modal Grade Placement
### U.S. School-aged Children (aged 5-17) Enrolled in School
### by Poverty, Family Characteristics, and Race; 1977, 1982, 1983.
### (Table continued)

| Family Structure | 3+ Years Behind | 2 Years Behind | 1 Year Behind | At Grade Level | 1 Year Ahead | 2+ Years Ahead | (N) |
|---|---|---|---|---|---|---|---|
| Both Parents | | | | | | | |
| All | | | | | | | |
| 1977 | .2 | 1.4 | 13.9 | 75.3 | 8.8 | .4 | (27,235) |
| 1982 | .3 | 1.7 | 16.7 | 73.1 | 7.9 | .4 | (21,320) |
| 1983 | .3 | 2.0 | 16.8 | 72.9 | 7.6 | .4 | (22,200) |
| Poor | | | | | | | |
| 1977 | .9 | 4.1 | 24.2 | 63.4 | 7.1 | .3 | (2,866) |
| 1982 | .7 | 4.2 | 27.2 | 62.2 | 5.4 | .3 | (3,226) |
| 1983 | .8 | 5.3 | 25.6 | 62.0 | 6.1 | .2 | (3,388) |
| Non-Poor | | | | | | | |
| 1977 | .2 | 1.0 | 12.6 | 77.0 | 8.8 | .4 | (22,280) |
| 1982 | .2 | 1.2 | 14.9 | 75.2 | 8.2 | .4 | (17,018) |
| 1983 | .2 | 1.4 | 15.1 | 75.1 | 7.8 | .4 | (17,811) |
| Mother Only | | | | | | | |
| All | | | | | | | |
| 1977 | .6 | 2.9 | 18.9 | 68.2 | 9.2 | .2 | (6,020) |
| 1982 | .8 | 3.7 | 21.5 | 66.0 | 7.7 | .4 | (5,594) |
| 1983 | .7 | 4.1 | 21.7 | 65.4 | 7.6 | .5 | (5,817) |
| Poor | | | | | | | |
| 1977 | 1.0 | 4.0 | 22.0 | 64.2 | 8.7 | .2 | (2,947) |
| 1982 | 1.2 | 5.4 | 26.4 | 60.6 | 6.1 | .3 | (2,864) |
| 1983 | 1.2 | 6.5 | 26.4 | 59.2 | 6.1 | .7 | (3,075) |
| Non-Poor | | | | | | | |
| 1977 | .3 | 1.8 | 15.5 | 72.8 | 9.4 | .2 | (2,657) |
| 1982 | .5 | 1.9 | 15.8 | 72.1 | 9.4 | .4 | (2,530) |
| 1983 | .2 | 1.5 | 16.0 | 72.7 | 9.3 | .3 | (2,564) |
| Father Only | | | | | | | |
| All | | | | | | | |
| 1977 | 1.0 | 2.0 | 21.5 | 66.1 | 9.3 | .3 | (708) |
| 1982 | 1.1 | 2.4 | 22.2 | 67.5 | 6.7 | 0.0 | (662) |
| 1983 | 1.8 | 5.7 | 22.0 | 62.9 | 6.9 | .8 | (704) |
| Poor | | | | | | | |
| 1977 | 3.2 | 4.0 | 29.0 | 55.6 | 7.3 | 0.0 | (124) |
| 1982 | 2.8 | 5.3 | 31.3 | 55.5 | 5.2 | 0.0 | (145) |
| 1983 | 5.2 | 7.9 | 41.3 | 45.1 | .5 | 0.0 | (140) |
| Non-Poor | | | | | | | |
| 1977 | .4 | 1.7 | 19.2 | 68.5 | 9.7 | .4 | (515) |
| 1982 | .7 | 1.8 | 20.2 | 71.3 | 5.9 | 0.0 | (474) |
| 1983 | 1.0 | 5.5 | 17.4 | 68.4 | 6.7 | 1.0 | (525) |

## Table 13: Percent Distribution on Modal Grade Placement
## U.S. School-aged Children (aged 5-17) Enrolled in School by Poverty, Family Characteristics, and Race; 1977, 1982, 1983.

| | 3+ Years Behind | 2 Years Behind | 1 Year Behind | At Grade Level | 1 Year Ahead | 2+ Years Ahead | (N) |
|---|---|---|---|---|---|---|---|
| **Race/Ethnicity** | | | | | | | |
| **Black** | | | | | | | |
| **All** | | | | | | | |
| 1977 | .8 | 3.1 | 19.1 | 65.6 | 11.2 | .3 | (5,025) |
| 1982 | 1.1 | 3.8 | 22.7 | 63.9 | 8.0 | .6 | (4,521) |
| 1983 | 1.1 | 4.7 | 23.2 | 61.7 | 8.7 | .6 | (4,795) |
| **Poor** | | | | | | | |
| 1977 | 1.3 | 4.3 | 22.3 | 61.6 | 10.2 | .4 | (2,399) |
| 1982 | 1.4 | 5.1 | 26.2 | 60.8 | 5.9 | .6 | (2,384) |
| 1983 | 1.5 | 6.4 | 27.3 | 57.1 | 7.2 | .5 | (2,558) |
| **Non-Poor** | | | | | | | |
| 1977 | .2 | 1.7 | 16.0 | 70.7 | 11.0 | .4 | (2,207) |
| 1982 | .6 | 2.0 | 18.1 | 68.4 | 10.3 | .6 | (1,921) |
| 1983 | .5 | 2.7 | 18.4 | 66.9 | 10.6 | .8 | (2,083) |
| **Hispanic** | | | | | | | |
| **All** | | | | | | | |
| 1977 | .8 | 3.5 | 20.9 | 66.2 | 8.1 | .5 | (2,143) |
| 1982 | .8 | 5.0 | 25.1 | 61.2 | 7.3 | .5 | (2,650) |
| 1983 | 1.1 | 5.0 | 25.1 | 60.9 | 7.6 | .4 | (2,851) |
| **Poor** | | | | | | | |
| 1977 | 1.4 | 4.6 | 27.5 | 60.3 | 6.1 | .1 | (766) |
| 1982 | 1.2 | 6.9 | 30.9 | 55.5 | 5.0 | .4 | (1,227) |
| 1983 | 1.6 | 7.1 | 30.0 | 54.0 | 6.9 | .4 | (1,318) |
| **Non-Poor** | | | | | | | |
| 1977 | .5 | 2.8 | 16.6 | 69.8 | 9.6 | .6 | (1,220) |
| 1982 | .5 | 3.0 | 20.5 | 66.3 | 9.1 | .6 | (1,321) |
| 1983 | .6 | 3.2 | 20.5 | 67.5 | 7.9 | .3 | (1,431) |
| **White** | | | | | | | |
| **All** | | | | | | | |
| 1977 | .2 | 1.3 | 13.7 | 76.1 | 8.4 | .3 | (26,916) |
| 1982 | .3 | 1.7 | 16.5 | 73.7 | 7.6 | .3 | (22,682) |
| 1983 | .3 | 1.9 | 16.2 | 73.8 | 7.4 | .4 | (23,818) |
| **Poor** | | | | | | | |
| 1977 | .6 | 3.7 | 22.5 | 66.9 | 6.1 | .1 | (2,670) |
| 1982 | .6 | 4.3 | 25.7 | 64.1 | 5.0 | .2 | (3,296) |
| 1983 | .8 | 5.4 | 23.2 | 65.1 | 5.1 | .5 | (3,530) |
| **Non-Poor** | | | | | | | |
| 1977 | .2 | 1.0 | 12.6 | 77.4 | 8.5 | .3 | (21,666) |
| 1982 | .2 | 1.2 | 14.8 | 75.5 | 7.9 | .3 | (18,214) |
| 1983 | .2 | 1.3 | 14.9 | 75.6 | 7.7 | .3 | (19,216) |

# The 1980 Census of Population and Housing School District File

Myron Schwartz
Decision Resources Corporation

## UNIT OF ANALYSIS

Some of the analyses in this report are based upon data extracted from a special tabulation of 1980 Census data. This data base is part of the Summary Tape File (STF3) series and it consists of 1980 housing and population data aggregated to the school district level. It is important to note that this data base does not include actual counts of district enrollment nor does it include any information on district educational programs. The data base is simply a description of populations who reside within school district boundaries. Consequently, our estimates of public enrollment are not actual enrollment counts, rather they are estimates of the number of students who attend public schools and reside within each of the school district boundaries. It is additionally important to note that the unit of analysis employed with this data base is the school district, even though many of the variables analyzed appear to describe individual characteristics. For example, this report includes an analysis of district percent non-white, district percent limited English proficiency, and district percent of children in poverty. Because of the data structure these variables are not available for individuals, rather they are only available as school district counts or averages. One of the consequences of this is that summary statistics calculated with the district as the unit of analysis are not likely to reflect nation-wide student averages, rather they reflect the simple unweighted averages of districts. The largest districts which account for a disproportionately large share of the national student population, contribute no more to a nation-wide average than the smallest districts. This circumstance is confounded by the large proportion of very small districts. The result is that summary statistics reflect, to a large degree, the conditions of small districts.

## STF3F DATA FILE

The Census Bureau constructed the STF3F file by obtaining boundary maps for local education agencies from their respective state education agencies. The Department of Education acted as an intermediary between the Census Bureau and the SEA's. After obtaining maps for all LEA's, Census personnel overlayed the LEA maps onto maps of existing Census areas for which data had already been tabulated. Census personnel then determined and apportionment factor for any overlapping boundaries. Finally, a table of equivalents was determined between the LEA's and the Census areas which was subsequently applied to the existing tabulations to arrive at the LEA counts (Census, 1983).

## DATA SUPPRESSION

The Bureau of the Census operates within a stringent set of guidelines to protect the confidentiality of those persons surveyed. In regard to the STF3F file, the Bureau "suppressed" the publication of population data when fewer than fifteen persons lived within a school district and they suppressed housing data when there were fewer than five households. Additionally, some districts had selected data items suppressed when the identification of respondents was possible by cross-referencing two complementary items (Census, 1983).

## SPECIAL CHARACTERISTICS OF STF3F

Some states maintain separate elementary and secondary school districts within the same geographical area. The Census has not prorated or apportioned population and housing counts from these areas. Consequently the counting of some persons and households has been duplicated (Riddle, 1984). In these areas each household or person contributes to the total counts in each of the overlapping LEA's. This seems to be an issue in some states but not in others (Riddle, 1984).

Although the task of eliminating all duplicate counting is not feasible in this report we did eliminate counts from overlapping school districts in the special case of New York City.

## HAWAII

The SEA in Hawaii chose to have data mapped to school attendance areas since there is only a single district in the state. For this reason, Hawaii has been eliminated from STF3F analyses in this report.

## POVERTY DATA

Poverty rates were based on calculations of data extracted from Table 94 of the STF3F school district file. These rates reflect the percentage of children (in families, excluding householders) 5-17 years old living in poverty in 1979. The definition of poverty used by the Census Bureau considers family size, income, and farm residence as factors (Census, 1981).

In addition to poverty percents we ranked each district according to their percent of children in poverty and assigned each district into one of four approximately equal quartiles:

| Quartile | Percent Poverty |
|---|---|
| Lowest quartile | 0.000 -- 7.299 |
| Second quartile | 7.300 -- 12.499 |
| Third quartile | 12.500 -- 20.999 |
| Fourth quartile | 21.000 -- 100.000 |

## SCHOOL DISTRICT SIZE

Actual LEA enrollment counts are not available from the STF3F file. To estimate school district size the count of persons 3 years old and over living within the district boundaries and enrolled in private school (K-12) was subtracted from the total count of persons 3 years old and over living within the district and enrolled in any school (K-12).

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## LARGE URBAN DISTRICTS

Large urban districts were identified as districts with an enrollment of at least 30,000 students and concomitantly with at least 99 percent of the population residing in urbanized areas. An urbanized area is the densely settled (1,000 persons per square mile or greater) area in and around central cities of at least 50,000 population.

## LIMITED ENGLISH PROFICIENCY

Limited English proficiency was defined as the percent of 5-17 year olds residing in the district who speak a language other than English in their home and who "speak English not well or not at all." This data is based on Table 27 of the STF3F school district file.

## VARIABLES DESCRIPTIONS FOR SCHOOL DISTRICT POVERTY ANALYSES

| VARIABLE | DESCRIPTION |
|---|---|
| School District Poverty Rate | The percent of 5-17 year olds (in families, excluding householders) in poverty, 1979. This variable is based on data from Table 94 of the Census STF3F file. |
| Public School Enrollment | Number of person 3 years old or over and living within the district who are enrolled in public school. Actually the difference between total number of students and private school students. This variable is based on data from Table 44 and 45 of the Census STF3F file. |
| Large Urban District | Districts which have greater than 30,000 students and are 99 percent or more urbanized. This variable is based on the public school enrollment variable and Table 1 of the Census STF3F file. |
| Region | U.S. Region Code<br>Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island.<br>North Central: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin.<br>South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Texas, Tennessee, Virginia, West Virginia.<br>West: Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming. |
| Non-white Population | The non-white population percent living in the district. From Table 16 of the Census STF3F file. |
| Poverty Quartile | Ranked quartiles of school district poverty (approximate). |

## Table 3.1

### Number of School Districts and Public School Students by Size Category

| Public School Enrollment Total | Number of Districts | Percent of Districts* | Number of Students | Percent of Students* |
|---|---|---|---|---|
| Less than 1000 | 8,034 | 51.3 | 3,042,400 | 6.8 |
| 1000 - 2499 | 3,545 | 22.6 | 5,828,027 | 13.0 |
| 2500 - 9999 | 3,312 | 21.1 | 15,514,898 | 34.5 |
| 10,000+ (Excluding Large Urban) | 690 | 4.4 | 13,732,510 | 30.6 |
| Large Urban | 82 | .5 | 6,812,637 | 15.2 |
| TOTAL | 15,674 | 100.0 | 44,930,472 | 100.0 |

Missing Districts = 75

Source: 1980 Census STF3F

* Percents do not sum to 100 due to rounding

## Table 3.2

### Distribution of High Poverty Concentration and Other Districts' Size

| School District Enrollment Size | High-Concentration Districts (Top 25th percentile) | | Other Districts (Lower 75th percentile) | |
|---|---|---|---|---|
| | Number | Percent | Number | Percent |
| **Less than 1000**<br>**(8034 districts)** | 2528 | 31.5 | 5506 | 68.5 |
| **1000 - 2499**<br>**(3545 districts)** | 648 | 18.3 | 2897 | 81.7 |
| **2500 - 9999**<br>**(3312 districts)** | 612 | 18.5 | 2700 | 81.5 |
| **10,000+**<br>**(Excluding Large Urban 690 Districts)** | 109 | 14.6 | 581 | 85.4 |
| **Large Urban**<br>**(82 districts)** | 40 | 48.8 | 42 | 51.2 |
| TOTAL | 3937 | 25.1 | 11726 | 74.9 |

## Table 3.3

## Average School District Poverty Rates by Enrollment Size

| School District Enrollment Size | Average Poverty Rate | Standard Deviation[a] | Number of Districts |
|---|---|---|---|
| Less than 1000 | 17.2 | 12.8 | 8034 |
| 1000 - 2499 | 13.5 | 9.5 | 3545 |
| 2500 - 9999 | 12.8 | 9.9 | 3312 |
| 10,000+ (Excluding Large Urban) | 12.7 | 8.1 | 690 |
| Large Urban | 19.7 | 9.9 | 82 |
| ENTIRE POPULATION | 15.3 | 11.5 | 15663 |

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[a] A Standard Deviation is a measure of the amount of variation within a group. Small standard deviations would indicate that the group is relatively homogeneous, while large standard deviations suggest heterogeneity. These standard deviations are relatively large.

## Table 3.4

## Distribution of High Poverty Concentration and Other Districts Among Regions*

| Geographic Region | High-Concentration Districts (Top 25th percentile) | | Other Districts (Lower 75th percentile) | |
|---|---|---|---|---|
| | Number | Percent | Number | Percent |
| Northeast (3128 districts) | 359 | 11.5 | 2769 | 88.5 |
| North Central (6159 districts) | 1215 | 19.7 | 4944 | 80.3 |
| South (3445 districts) | 1676 | 48.7 | 1769 | 51.3 |
| West (2931 districts) | 687 | 23.4 | 2244 | 76.6 |
| TOTAL | 3937 | 25.1 | 11726 | 74.9 |

* States comprising the geographic regions are from the U.S. Census Regions:

Northeast:

Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island

North Central:

Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin

South:

Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia

West:

Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming (Hawaii was not included)

## Table 3.5

## Average School District Poverty Concentrations in Each Region

| Geographic Region | Average | Standard Deviation[a] | Number of Districts |
|---|---|---|---|
| By Region: | | | |
| Northeast | 11.1 | 8.8 | 3128 |
| North Central | 13.8 | 11.0 | 6159 |
| South | 21.6 | 12.0 | 3445 |
| West | 15.4 | 11.6 | 2931 |
| ENTIRE POPULATION | 15.3 | 11.5 | 15663 |

[a] A Standard Deviation is a measure of the amount of variation within a group. Small standard deviations would indicate that the group is relatively homogeneous, while large standard deviations suggest heterogeneity. These standard deviations are relatively large.

## Table 3.6

### Distribution of High Concentration Districts and Other Districts by Level of Urbanization

| School District Urbanization Level | High-Concentration Districts (Top 25th percentile) | | Other Districts (Lower 75th percentile) | |
|---|---|---|---|---|
| | Number | Percent | Number | Percent |
| Less than 1% Urbanized | 3623 | 29.7 | 8575 | 70.3 |
| Between 1 and 25% Urbanized | 23 | 6.4 | 334 | 93.6 |
| Between 26 and 74% Urbanized | 36 | 5.7 | 497 | 94.3 |
| Between 75 and 99% Urbanized | 61 | 6.7 | 851 | 93.3 |
| More than 99% Urbanized (Excluding Large Urban) | 154 | 10.4 | 1327 | 89.6 |
| Large Urban | 40 | 48.8 | 42 | 51.2 |
| TOTAL | 3937 | 25.1 | 11726 | 74.9 |

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Table 3.7

Mean School District Poverty Levels
by Urbanization Level

| School District Urbanization Level | Average Rate | Standard Deviation[a] | Number of Districts |
|---|---|---|---|
| Less than 1% Urbanized | 16.9 | 11.9 | 12198 |
| Between 1 and 25% Urbanized | 8.9 | 7.2 | 357 |
| Between 25 and 74% Urbanized | 8.8 | 6.7 | 633 |
| Between 75 and 99% Urbanized | 9.2 | 7.0 | 912 |
| 99% or More Urbanized (Excluding "Large Urban) | 9.3 | 7.9 | 1481 |
| Large Urban | 19.7 | 9.9 | 82 |
| ENTIRE POPULATION | 15.3 | 11.5 | 15663 |

[a] A Standard Deviation is a measure of the amount of variation within a group. Small standard deviations would indicate that the group is relatively homogeneous, while large standard deviations suggest heterogeneity. These standard deviations are relatively large.

## Table 3.8

## Average Percent Non-White
## by Poverty Quartile

| District Quartile | Average Percent Non-white | Standard Deviation[a] | Number of Districts |
|---|---|---|---|
| Lowest 25 Percentile (0 - 7%) | 3.3 | 5.2 | 3565 |
| Next Lowest 25 Percentile (8 - 12%) | 4.6 | 7.0 | 3498 |
| Next High 25 Percentile (13 - 20%) | 7.2 | 10.0 | 3554 |
| High 25 Percentile (21 - 100%) | 17.5 | 20.4 | 3401 |
| ENTIRE POPULATION | 8.0 | 13.2 | 14018 |

[a] A Standard Deviation is a measure of the amount of variation within a group. Small standard deviations would indicate that the group is relatively homogeneous, while large standard deviations suggest heterogeneity. These standard deviations are relatively large.

## Table 3.9

### Distribution of Majority Non-White School Districts by Poverty Concentration

| District Quartile | Number of Such Districts Serving Over 50 Percent Non-White Students | Percent of All Districts Serving Over 50 Percent Non-White Students |
|---|---|---|
| Lowest 25 Percentile (0 - 7%) | 4 | 1.4 |
| Next Lowest 25 Percentile (8 - 12%) | 8 | 2.7 |
| Next Highest 25 Percentile (13 - 20%) | 13 | 4.4 |
| Highest Percentile (21 - 100%) | 269 | 91.5 |

## Table 3.10

### Distribution of Districts with 10% or More Limited-English Speakers

| District Quartile | Number of Such Districts Serving At Least 10 Percent LEP Students | Percent of All Districts Serving at Least 10 Percent LEP Students |
|---|---|---|
| Lowest 25 Percentile (0 - 7%) | 9 | 4 |
| Next Lowest 25 Percentile (8 - 12%) | 10 | 5 |
| Next Highest 25 Percentile (13 - 20%) | 30 | 14 |
| Highest Percentile (21 - 100%) | 162 | 77 |

## Table 3.11

## Average Percent of Limited English Speakers by School District Poverty Quartile

| District Quartile | Average Percent of Limited-English Proficient Students | Standard Deviation[a] | Number of Districts |
|---|---|---|---|
| Lowest 25 Percentile (0 - 7%) | .37 | 1.4 | 3908 |
| Next Lowest 25 Percentile (8 - 12%) | .47 | 1.5 | 3853 |
| Next Highest 25 Percentile (13 - 20%) | .64 | 1.8 | 3965 |
| Highest Percentile (21 - 100%) | 1.4 | 4.3 | 3937 |
| ENTIRE POPULATION | .72 | 2.6 | 15663 |

[a] A Standard Deviation is a measure of the amount of variation within a group. Small standard deviations would indicate that the group is relatively homogeneous, while large standard deviations suggest heterogeneity. These standard deviations are relatively large.

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# APPENDIX F

## Support for Chapter 4

Part 1 A Profile of Program Beneficiaries

Prepared By: Richard K. Jung
Department of Education

*****

Part 2 : Report on Poverty and Achievement Level of Title I/Chapter 1 Participants -- A Reanalysis of SES Data

Prepared By: Ming Mei Wang
University of Iowa

*****

Part 3 : Reanalysis of District Practices Study Targeting Data

Prepared By: Ann Milne
Decision Resources Corporation

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# Part 1

# A Profile of Program Beneficiaries

Richard K. Jung
Department of Education

## Poverty

The objective of this analysis was to compare Title I/Chapter 1 recipients to the entire school-age population along four dimensions: the poverty status of the students' families; the students' ethnic and language backgrounds; the grade levels they attended; and whether they were enrolled in public or private schools. No one source of information had information about these characteristics either for the Title I/Chapter 1 program or for the school-age population.

The task turned out to be two-fold: (1) to find, on the one hand, the most recent data for these four characteristics of the Title I or Chapter 1 population; and (2) to find, on the other hand, comparable descriptions of the entire school-age population. The following discussion summarizes the results of this process for each of the four characteristics.

The most recent national data on the poverty status of program participants are from the Sustaining Effects Study. These data were collected during the 1976-77 school year for students in grades 1 through 6. The Sustaining Effects Study data were also used for obtaining comparable data on the prevalence of poverty among the school-age population.

The Sustaining Effects Study classified as poor those students who were from families whose income was below the 1976 Orshansky index or from families who received AFDC, or were neglected, delinquent, or foster children attending public schools. All others were classified as non-poor. This definition of poverty corresponded to the allocation criteria specified by law for the Title I, ESEA program at that time.

These and other family background data were collected by means of a household questionnaire. Between January and April, 1977, the parents of over 15,000 public elementary school children were interviewed in order to derive population estimates for the approximately 20 million children in grades 1 through 6 at that time. For more information about this survey methodology, see: Breglio, Vincent J., Ronald H. Hinckley, and Richard S. Beal. Students' Economic and Educational Status and Selection for Compensatory Education. Report 2 from the Sustaining Effects Study. Santa Monica, CA. System Development Corporation, 1978.

## Race and Ethnicity

Racial/ethnic data for the school-age population were obtained by Child Trends, Inc. from two items on the 1983 Current Population Survey, U.S. Bureau of Census -- one on race, the other on origin or descent for children aged 5 to 18. The White category from this analysis refers to non-Hispanic whites; similarly, the Black category refers to those whose race is Black but whose origin or descent is not Hispanic. The Hispanic category includes those whose origin or descent is Mexican American, Chicano, Mexican, Puerto Rican, Cuban, Central or South American, or Other Spanish, regardless of race. The Other category refers to non-Hispanics or a race other than White or Black. Both the White and Black categories in these tabulations using Census data refer to a more restricted population that corresponding categories in publications and tabulations sponsored by the U.S. Bureau of the Census, since the Bureau's categories include Hispanics who identify themselves as White or Black, respectively.

Racial/ethnic data for the Chapter 1 program (1982-83 school year) were obtained from published table (U.S. Department of Education/Office of Planning, Budget and Evaluation. Annual Evaluation Report, Fiscal Year 1984. Washington, DC: U.S. Government Printing Office, 1985, p. 101-03. Data in this table were based on figures provided by 36 states reporting this information through the Chapter 1 Information and Evaluation System for school year 1982-83. Similar to Child Trend's reanalysis of 1983 Census data for deriving school population estimates, the White category from this source refers to Non-Hispanic Whites, and the Black category to Non-Hispanic Blacks. The Other category includes Asian or Pacific Islanders, American Indians or Alaskan natives. The Chapter 1 reporting system is the only recent source of national data on the minority status of program participants. Estimates from this source, however, are not stable from year to year, largely as a result of different states reporting or not reporting each year and changes in some states procedures for collecting and reporting such information.

## Private School Attendance

### Chapter 1's Enrollment of Private School Students Compared to Elementary/Secondary Private School Enrollments by Type of Schools, 1983

| | Chapter 1 Participants Enrolled in Private Schools | | Total Private Enrollments* | | Proportion of Students Served by Chapter 1 |
|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | |
| Catholic | 239,637 | 77% | 3,200,000 | 56% | 7.5% |
| Other Religious Affiliations** | 26,715 | 9 | 1,400,000 | 25 | 1.9 |
| Not Affiliated*** | 44,594 | 14 | 1,200,000 | 21 | 3.7 |
| TOTAL | 310,946 | 100% | 5,700,000 | 101% | 5.5% |

* Includes prekindergarten through grade 12.

** Includes Lutheran, Jewish, Evangelical and other religious affiliates.

*** Includes non-affiliated independents.

NOTE: Details may not add to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, NCES Bulletin, "Private Elementary and Secondary Education, 1983 Enrollment, Teachers, and Schools" (December 1984), p. 4; U.S. Department of Education, National Center for Education Statistics, unpublished draft table from NCES Private School Survey (August 9, 1985).

NOTE: According to NCES data, 310,946 Chapter 1 participants were enrolled in private schools during the 1983-84 school year. This total differs notably from OPBE's estimate of 225,123 for the same school year. The differences in these estimates could be related to a number of factors, including: (1) differences in respondents (private school principals (NCES) vs. public school officials (OPBE)), (2) the time of data collection (the summer before the 1983-84 school year (NCES) vs. the fall after the 1983-84 school year (OPBE)); and, (3) that private school principals might have counted one child receiving two different types of services as two students (e.g., a duplicated count) vs. the unduplicated count of OPBE.

Grade Level

### Chapter 1 Enrollment Compared to Total School-Age Population

| Grade Levels | Enrollments 1983-84 | |
|---|---|---|
| | Chapter 1 | School-age Population |
| Elementary (Grades Pre-K-8) | 4,345,188 | 31,118,308 |
| Secondary (Grades 9-12) | 500,751 | 13,692,360 |
| TOTAL | 4,845,939 | 44,810,668 |

SOURCE: Advanced Technology, Synthesis of Chapter 1 Data: Summary Report, draft (1985), p. 4; U.S. Department of Education, National Center for Education Statistics unpublished tables, "Total Enrollment in Private Elementary and Secondary Schools by Grade Category and Affiliation"; and "Pupil Membership in Public Elementary and Secondary Schools, by Grade Level and State and Other Areas: United States, October 1, 1983."

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## Private School Attendance

### Chapter 1 Enrollment Compared to Total Enrollment, Public and Private School Students

|  | Enrollments 1983-84 |  |
|---|---|---|
|  | Chapter 1* | School-age Population |
| Public | 4,620,927 | 39,328,000 |
| Private | 225,123 | 5,715,000 |
| TOTAL | 4,846,050 | 45,043,000 |

* Number of regular term Chapter 1 participants, unduplicated count.

SOURCE: Advanced Technology, Synthesis of Chapter 1 Data: Summary Report, draft (1985) p. A-1; U.S. Department of Education, National Center for Education Statistics, The Condition of Education 1985 Edition, p. 18.

## Part 2

# Report on Poverty and Achievement Level of Title I/Chapter 1 Participants -- A Reanalysis of SES Data

Ming-Mei Wang
University of Iowa

## 1. Who Received Title I Services in School Year 1976-77?

National projection of the participation rates in Title I (and other CE) programs by grade 1 through 6 students attending public schools were obtained from data collected in the Participation Substudy of the Sustaining Effects Study (SES). In this substudy, household interviews were conducted for a sample of about 15,000 students attending grade 1 through 6 in the 242 schools that comprise the First-Year representative sample for the SES.

Data on family income and receipt of public assistances (e.g., AFDC, foster homes) were obtained during the interview so that the economic status of each student's family can be accurately determined. With reference to the then current Title I funds allocation formula, children from families with income below the 1976 Orshansky poverty level or receiving AFDC, and children living in foster homes or public institutions are considered as meeting Title I poverty criteria and referred to as 'poor' (or sometimes more explicitly 'poor/AFDC') in this report. Children from families that did not meet these poverty criteria are classified as 'non-poor'.

Achievement levels of the students in this sample were assessed by their scores on the Comprehensive Tests of Basic Skills (CTBS) that were administered to them in the Fall of 1976. Two alternative definitions for low-achieving are employed in the present analysis: (1) Students whose percentile scores for the Basic Skill Total (sum of Reading and Math subtests) were at or below the 25th percentile are classified as 'low-achievers'; those who scored above the 25th percentile are classified as 'regular achievers'. This definition is referred to as 'the quartile definition' for low-achievement. (2) Using the 50th percentile, instead of the 25th percentile, as the cutoff for low- achieving, i.e., students scored at or below the median on the Basic Skill Total are classified as 'low-achievers' and those above the median are 'regular-achievers'. This second definition is referred to as 'the median definition' for low-achievement.

In order to determine Title I participation rates, students are classified into four categories based on their receipt of CE services. Students who receive Title I services (and possibly also other CE services) in reading or math or both are counted as Title I participants. Those who received only CE services (in reading or math or both) that were supported entirely with Non-Title I funds are counted as 'other CE only' students. All other students are counted as Non-CE students and further divided into 'Non-CE students in CE schools' and 'Non-CE students in Non-CE schools' depending on whether their schools received compensatory funds (Title I and/or Non-Title I) or not.

Appropriate sample weights were applied to the Participation Substudy data to obtain national estimates of Title I participation rates. The results are presented in Tables 1 and 2. Table 1a shows the participation rates for four groups of students in grades 1-6 employing the quartile definition of low-achievement: Poor/Low-achievers, Non-poor/Low-achievers, Poor/Regular-achievers, and Non-poor/Regular-achievers. Consistent with the primary objective of Title I programs to serve educationally needy students from low-income families, participation rate in Title I is highest for poor/low-achievers. The next highest rate is found for non-poor/low-achievers, reflecting that within schools the purpose of Title I was to provide additional educational assistance to low-achieving students (although federal allocation of funds were based on economic criteria of the children in the school's attendance area). The participation rate is lowest for non-poor/regular-achievers as expected. Participation rates in other CE programs that were supported solely by Non-Title I funds are lower for all four groups of students and do not differ as much among the groups as in the case of Title I participation.

As can be seen from Table 1a, a large number of Non-poor students who scored above the 25th percentile received Title I assistance, while nearly 60 percent of poor students who scored at or below the 25th percentile did not receive such assistance (and indeed slightly more than 40% of them did not receive any CE services). This result clearly demonstrates that Title I, as was implemented, fell short of its goal to serve students in priority of need. This imperfection of targeting underscores the practical difficulties in attaining easily defined goals: the wide distribution of needy students across the schools, the imperfect relationships between poverty and achievement, and the different criteria for identifying low-achieving students in individual schools (partly because school curriculum may differ and partly because low-achieving may be defined relative to the achievement level of other students in the same school rather than the national norm) can all contribute to apparent departures from the intended goal.

Whatever the reasons for diversion from the intended target, Title I, as was implemented then, provided services to students who were less needy than some of those who did not receive such services. This raises an important question on whether these less needy participants constitute a substantial proportion of the Title I students. If so, it would have an impact on the effective use of available Title I funds. To answer this question, we reformatted the data contained in Table 1a to show the composition of Title I students. Because Title I funds are limited, schools can only serve a certain number of students if adequate level of service intensity was to be provided. As of 1976, only 14.7 percent of elementary students were selected for Title I services. Thus if an effective selection procedure was used, we would expect a large majority of Title I students to be those who achieved at or below the 25th percentile. Inspection of the first column of Table 1b, however, reveals that just slightly over a half (53.5%) of Title I students achieved at or below the 25th percentile in basic skills, while nearly a third of Title I students (30.8%) achieved above the 25th percentile and are not from poor/AFDC families. This result suggests that it is possible, though may be difficult in practice, to improve on the procedures of Title I implementation (with regard to both funds allocation and student selection in Title I schools) so that it can better serve the intended recipients.

The results based on the median definition of low-achievement are similar, as shown in Tables 2a and 2b. Again, the group of poor/low-achievers has the highest participation rate (36.4%) in Title I programs, followed by Non-poor/low-achievers, and poor/regular-achievers. Less than 4 percent (3.8%) of non-poor/regular-achievers received Title I services. As the number of poor/low-achievers increased substantially with the relaxation of the definition of low-achievement, their participation rate decreased from 40.7% to 36.4%. On the other hand, Table 2b shows that the less stringent definition of low-achievement gives a much more successful picture of Title I targeting: a great majority of Title I students are regarded as educationally needy under this definition (84.6% of Title I students achieved at or below the 50th percentile rank). By comparison, a smaller proportion (64.7%) of 'other CE only' students scored below the median in basic skills.

Because achievement tests typically have low reliability for grade 1 and because students in grade 1 may not have attended kindergarten in the same schools so that there is little information on their previous achievement, it is difficult to accurately assess the success of Title I in selecting low-achieving students in grade 1 to receive services. To obtain a clearer picture on the success of Title I programs in serving the intended recipients, we repeated the participation analysis presented in Tables 1 and 2 for grades 2-6 (excluding grade 1). The results are shown in Table 3, where low-achievement is defined as scoring at or below the 25th percentile and Table 4, where low-achievement means scoring at or below the 50th percentile.

By excluding grade 1 in the analysis, we find a slight increase of participation rate for low-achievers and a similar increase in percent of Title I students who are low-achieving. However, the participation patterns for the four groups of students by achievement and economic status remains the same: (1) participation rate is highest for poor/low-achievers and lowest for non-poor/regular-achievers; (2) more than a half (56.4%) of Title I students achieved at or below the 25th percentile in basic skills and about a third (31.5%) achieved between the 26th and 50th percentile (in total, 87.9% of Title I students in grade 2-6 achieved at or below the national median).

It is known that Title I provides services to more students in reading than in math. In order to examine potential differences between Title I reading and math programs, similar analyses of participation rates are also performed separately for reading and math. In these analyses, achievement level and CE participation are determined for reading and math separately, on the basis of students' CTBS scores and CE selection records for the respective subject area. For these analyses, we also employed an alternative definition of economic status. In addition to the Title I poverty criteria used to define 'poor' in the preceding analysis, we may also define 'poor' solely on the basis of low family income. For this second definition of 'poor', students whose family income was below the 1976 Orshansky poverty cutoff are classified as 'poor'. Since the Title I poverty criteria include the Orshansky poverty criterion as well as other criteria not based on income (such as receipt of AFDC, and residence in foster homes), there are more students classified as 'poor' under the Title I poverty criteria than under the Orshansky poverty cutoff alone. (The national estimates of the percentage of 'poor' elementary students were 16.9% based on the Orshansky poverty cutoff alone, and 20.9% based on the Title I poverty criteria.)

Again, two definitions of low-achievement are examined: one considers those scored at or below the 25th percentile as 'low-achieving', and the second considers those scored at or below the 50th percentile as 'low-achieving'. Because the achievement level of students in grade 1 cannot be reliably determined (due to low reliability of test scores and lack of information on students who did not attend the same school in the previous year), they are excluded in these separate analyses. That is, only students in grades 2 through 6 are included in these additional analyses.

The results of these separate analyses are summarized in Tables 3c-3f and 4c-4f for reading, and Tables 3g-3j and 4g-4j for math. The quartile definition of low-achievement is used in Tables 3c-3j, while the median definition of low-achievement is used in Tables 4c-4j.

As shown in SES Report #5 (see Table 1-7 on page 9), a majority of students who received Title I services in reading also received Title I services in math, and only a small proportion of students received Title I services in math but not in reading. This result and the high correlation between reading and math achievement suggest that the participation rates in reading would be close to those obtained earlier for basic skills (reading and math combined). However, the participation rates in math would be considerably lower. Comparisons of the corresponding tables for reading and math indicate that the participation patterns for the four groups of students classified by their economic status and achievement level are similar for the reading and math Title I programs: highest for poor/low-achievers and lowest for non-poor/regular-achievers, as in earlier results for basic skills.

Noteworthy results from these additional analyses are: (1) Nationally, 15.3% of grade 2-6 students received Title I services in basic skills (reading and/or math), while 13.1% of grade 2-6 students received Title I services in reading, and only 7.5% received Title I services in math. (The corresponding percentages for grade 1-6 students are 14.7% in basic skills, 12.8% in reading, and 7.2% in math.) (2) For reading, 55.1% of Title I students in grade 2-6 achieved at or below the 25th percentile, while 88.8% of them achieved at or below the 50th percentile. For math, the percentages are 50.7% achieved at or below the 25th percentile and 81.0% achieved at or below the 50th percentile. As in basic skills, there are proportionally more Title I students who achieved at or below the 25th percentile than those who achieved between the 26th and 50th percentile. (3) About 30% of grade 2-6 students who scored at or below the 25th percentile in reading received Title I services in reading, but only 15.8% of grade 2-6 students who scored at or below the 25th percentile in math received Title I services in math. The corresponding percentages for those scored at or below the 50th percentile are 23.7% for reading and 12.7% for math. (4) 7.7% of grade 2-6 students who scored above the 25th percentile in reading received Title I reading services, and 4.9% of those who scored above the 25th percentile in math received Title I math services (the percentage is 8.8% for basic skills). The corresponding percentages for those scored above the median are 2.9% for reading and 2.8% for math (3.9% for basic skills). (5) From Tables 3c, 3e, 3g, and 3i, it can be derived that 46.4% of grade 2-6 students from families with income below the Orshansky poverty cutoff achieved at or below the 25th percentile in reading. Additionally, 39.3% of grade 2-6 students who may not be from low-income families but nevertheless meet the Title I poverty criteria (receiving AFDC or lived in foster homes) achieved at or below the 25th percentile in reading. In math, the corresponding percentages are 42.9% for those from families having income below the Orshanky poverty cutoff and 37.2% for those who meet Title I poverty criteria other than the low-income criterion.

In the earlier implementation of Title I, low-achievement was frequently defined in terms of grade-equivalent scores rather than percentile ranks. That is, students achieving one or more year below their assigned grades were considered as low-achievers. This definition identifies disproportionally more low-achievers at the upper grades than at the lower grades. However, in total, there would be about a quarter of grade 2-6 students achieving at or below this level. For the purpose of comparison, results from a previous analysis based on the grade-equivalent definition of low-achievement are reproduced in Table 5. It can be seen that the picture presented in Table 5 is similar to that in Table 3, but the participation rate for poor/low-achievers is slightly smaller in Table (39.9% compared to 42.2% in Table 3). Further, 56.4 percent of Title I students achieved at or below the 25th percentile, but only 47.4 percent of Title I students achieved at levels that are one or more years below their assigned grades. (Note that there are some small differences between the data employed to compile Tables 3 and 5. The data for Table 3 were more thoroughly edited by checking on the consistency of information from several data collection instruments and aided by follow-up phone calls to school coordinators for clarification where substantial discrepancies were found among various data sources. However, the differences exist primarily in receipt of other CE services and therefore do not affect the results concerning participation in Title I).

In summary, the results in Tables 1 through 5 suggest: (1) As the program has intended, participation rate in Title I is highest for poor/low-achievers and lowest for non-poor/regular-achievers regardless of which of the three definitions of low-achievement is used; and (2) The participation rate for poor/low-achievers decreases slightly as the cutoff for low-achievement is raised from the 25th percentile to the 50th percentile. However, the relaxed definition of low-achievement results in a large increase of the percent of Title I students who are low-achieving. In practice, the percent of Title I students who are low-achievers is frequently cited to attest the success in Title I targeting. Because this targeting index is largely dependent on the definition of low-achievement, it should be interpreted by considering also the participation rate of low-achievers.

Other findings from Tables 1 and 2 that may be of policy interest are summarized below. These results are used to aid in the formulation of further analyses on the pattern of Title I participation by schools and by grades. Note that all of these results are for school year 1976-77.

(1) It is estimated that 31.8% of elementary students (grades 1-6) who achieved at or below the 25th percentile in basic skills received Title I services, but only 25.4% of those who achieved at or below the 50th percentile received Title I services. This implies that the participation rate for those achieving between the 26th and 50th percentile is lower than that for those between the 1st and 25th percentile. In addition, 16.6% of those achieving at or below the 25th percentile received assistance from non-Title I funds alone, making a total of about half (48.4%) of those achieving at the bottom quarter having received some form of compensatory services. Of those achieving at or below the 50th percentile, 14.8% received non-Title I compensatory services, for a total of 40.2% receiving any CE services.

(2) 9.1 percent of grade 1-6 students who achieved above the 25th percentile participated in Title I; and 4.5% of those achieved above the 50th percentile participated in Title I.

(3) Of the Title I students in grade 1-6, 53.5% achieved at or below the 25th percentile, while 84.6 percent achieved at or below the 50th percentile. This indicates that 31.1 percent of the Title I students achieved between the 26th and 50th percentile.

(4) Of the Title I students in grade 1-6, 41.5 percent meet the poverty criteria for Title I funds allocation, while only 20.8% of all elementary students in public schools meet the same poverty criteria. Thus there are proportionally more poverty students in Title I programs than generally found in public elementary schools.

(5) Disregarding achievement and economic status, 14.7 percent of grade 1-6 students in public schools participated in Title I programs. An additional 11.3 percent received CE services that were entirely funded by non-Title I money. In total, about 26 percent of elementary students received some CE assistance. Note

that the estimate for Title I participants has not changed from previous reports (e.g., SES Report #2), but the estimate for 'Other CE Only' participants has increased slightly (from 9.9% as obtained in SES Report #2 to the present estimate of 11.3%). The data editing against other information sources affects primarily the students participated in non-Title I programs. The objective and target population of these programs were generally less specific and less clearly stated, making identification of program participants more difficult.

2. Does Percentage of Title I Students Who Are Poor Vary With Schools?

As Federal allocation of Title I funds (and to a large extent also district allocations to schools) was based on economic criteria, it is of interest to examine the proportion of Title I students whose family economic status met the Title I poverty criteria. However, within schools the emphasis of Title I is to provide compensatory services to low-achieving students and economic status, though may be considered, is seldom a direct selection criterion for Title I services. In light of this student selection policy and the moderate relationship between achievement level and economic status, the percentage of Title I students who are poor/AFDC within a school need not be always high. Indeed the proportion of Title I students who are poor may primarily reflect the poverty within the school.

Since accurate information on student poverty level is only available for the Participation Substudy sample, this sample is employed in the present analysis. Therefore the small sample sizes in many of the schools can be expected to produce large estimation errors.

Because nationally, 20.8% of all grade 1-6 students and 41.5% of Title I students are classified as poor/AFDC, we divided the school percentage of Title I students who were poor into five categories: 0-20%, 21-40%, 41-60%, 61-80% and 81-100%. The numbers of Title I schools in each of these five categories are tabulated in Table 6a. This result allows us to see what proportion of Title I schools have higher concentrations of poor students in their Title I programs than the national projection (which is obtained disregarding school boundaries).

It is found that approximately two-third of the Title I schools have a percentage below the national projection. The distribution of this percentage across Title I schools is positively skewed: only a few has very high percentages of Title I students who are poor (8 of the 156 Title I schools has more than 80%).

As commented earlier, small sample size in the schools means that data are available only for a small number of Title I students and sampling error may be large. Of the 156 Title I schools, about half (85 schools) have less than 10 Title I students included in the sample. A crosstab of the number of Title I students by the percentage of Title I students who are poor suggests that schools having a small sample of Title I students tend to have a smaller percentage of them who are poor. Table 6b tabulates the number of Title I schools that have various percentages of Title I students who are poor for the 71 schools that have 10 or more Title I students in the sample. (It is important to note that the number of Title I students in the sample need not be proportional to the total number of Title I students in the school, because sample selection for the study was taken disregarding information on Title I participants, and not necessarily in proportion with the school enrollment).

Comparison of Table 6a and 6b shows that two-thirds of the Title I schools for which the estimated percentage of Title I students who are poor is lower than the national estimate of percentage of poor students (those in the category of 0-20%) and half of the schools having the percentage higher than the national estimate but lower than the national projection of the percentage of Title I students who are poor (those in the category of 21-40%) indeed have less than 10 Title I students in the sample to provide the basis for the estimation. Due to this problem of limited sample sizes, interpretation of Table 6 should be made with great caution.

To facilitate the visual inspection, the results in Tables 6a and 6b are also graphically presented in Figures 1a and 1b, respectively.

3. Does Percentage of Title I Students Who Are Low-Achievers Vary By Schools and Grades?

Because of the emphasis on serving low-achieving students within each school the variations of percentage of Title I students who are low-achievers across grades and schools are of primary interest. As explained earlier in Question 1, this percentage is very sensitive to the change of the definition for low-achievement. However, the pattern of variations across schools and grades may remain similar.

As only data on achievement level and Title I participation are required for this analysis, all students attending the 156 Title I schools in the First-year SES representative sample are included in the calculation of the percentages. Thus unlike in Question 2, the percentages are not estimated from a sample of the students and therefore are not subject to estimation errors (except some errors may be introduced as a result of missing data for some students, but such errors are expected to be small).

Because the two definitions of low-achievement stipulates that there would be 25% and 50%, respectively, of all elementary students falling into the low-achiever group, we divided the percentage of Title I students who are low-achieving into four categories as 0-25%, 26-50%, 51-75% and 76-100%. These conveniently formed categories also have boundaries close to national projections of percent of Title I students who are low-achieving (for example, it was projected that under the quartile definition for low-achievement, 53.6% of Title I students would be considered low-achievers).

The percentage of Title I students who are low-achievers is obtained separately for each grade and for the six grades combined for each of the 156 Title I schools. The numbers of Title I schools that have various percentages of Title I students who are low-achieving are tabulated in Table 7 by grades and then for the six grades combined. Note that because schools vary in the grades they operated and also in the grades for which they provided Title I services, the total number of schools in the table differs by grades.

Inspection of Table 7a shows that under the quartile definition for low-achievement, the distribution of Title I schools with respect to this percentage is similar among the grades except for grade 1. For grade 1, the distribution is positively skewed, having few schools that have high percentage of Title I students who achieved at or below the 25th percentile. This difference between grade 1 and other grades can again be attributed to the unreliability of student achievement scores at this grade level and the lack of information on previous achievement to provide a basis for selection into Title I programs.

Overall, it can be seen that with the exception of grades 1 and 4, more than a half of the Title I schools have the percentage higher than the national projection. Further, more than two-thirds of the schools have the percentage above what would be expected for the general population of elementary students (25%). These data suggest that Title I was quite successful in directing its services primarily to low-achieving students within the school.

Not surprisingly, when the median definition for low-achievement is used, the distribution becomes notably negatively skewed (see Table 7b). With the exception of grade 1, an overwhelming majority of the schools fall into the highest category. It is clear that within the school, Title I services are consistently provided to those achieving below the nation's median.

As discussed earlier in this report, a complete picture of the success in Title I targeting requires considerations of the percentage of Title I students who are low-achieving as well as the participation rate of low-achievers. A successful targeting of Title I program would be serving only those who are in need and serving as many of those in need as funds permit.

Specifically, the number of students to be served in the school would depend on the funding level and the number of students in need. There can be a trade-off between the number of students served and the intensity of services. To strive for a balance, some schools may choose to serve only part of their low-achievers. For these schools, it would be effective targeting if nearly all Title I students are low-achievers even though the participation rate for low-achievers may not be as high as desired. On the other hand, some schools may choose to serve as many students as possible. These schools would be doing well if the participation rate for low-achievers is high and the percent of Title I students who are low-achievers is also high. However, if by serving a large number of students, the school simply extends the services to many students disregarding educational need, then we would not consider the targeting effective. In such a case, we would find that although the participation rate for low-achievers is high, they do not constitute a large portion of Title I students (i.e., many who are not low-achievers would also be enrolled in the program). In another situation, schools may indeed be doing a very ineffective targeting by having a substantial number of those who are not low-achievers enrolled in the program while leaving out many low-achievers.

In the case where targeting is effective but participation rate for low-achievers is not very high, more funds may be required or the service intensity may have to be reduced in order to increase the participation rate for those who need the services. On the other hand, if participation rate for low-achievers is high but they constitute only a fraction of the Title I students, the school would need to improve on targeting by screening out those who are not in need so that more services can be provided to those in need.

To provide some information for such policy considerations, we dichotomized the percentages of Title I students who are low-achievers into low and high categories at a value near the national projection (i.e., 50% under the quartile definition when national projection of this percentage is 53.5% and 80% under the median definition when national projection is 84.6%). Similarly, the participation rates for low-achievers are dichotomized into low and high categories (using 30% as cutoff under the quartile definition when national projection of this participation rate is 31.8%, and 25% under the median definition when the national projection is 25.4%). The two dichotomies are crossed to form four categories of index for Title I targeting. Tables 8a and 8b tabulate the schools by these 4 categories of targeting index for each grade and also for the six grades combined. In Table 8a, low-achievement is defined as scoring at or below the 25th percentile. In Table 8b, low-achievement is defined as scoring at or below the 50th percentile.

Examination of these two tables reveals that the schools with small percentages of Title I students who are low-achievers tend to have a high participation rate for low-achievers (they are in the Low A/ High B category as labeled in the Table). This suggests that these schools spread the services to those less in need at the expense of a possible reduction in services for those who are in greater need. Another group of schools (those labeled as High A/Low B category) appear to aim at providing more services to the participants at the expense of serving fewer of those in need. There are not as many schools in this group as in the 'Low A/High B' group just discussed.

Except for grade 1, where it is difficult to evaluate the targeting effectiveness employing a common standardized achievement test to classify the achievement level of students, relatively few schools are considered as being very ineffective in targeting their Title I services (in the 'Low A/Low B' category).

The results presented in Tables 7a and 7b are also shown via barcharts in Figure 2a1 through 2a6 by grades and in Figure 2b for the six grades combined. Likewise, the results in Tables 8a and 8b are shown via barcharts in Figure 3a1 through 3a6 and in Figure 3b, respectively. In all cases, the results under the two definitions of low-achievement exhibit similar patterns.

4. What Are the Characteristics of Title I Schools That Enrolled High Percentages of Regular Achievers in Title I Programs?

To determine if schools that enrolled high percentages of regular achievers (mistargeting Title I services) are systematically different from other Title I schools, we examined several school characteristics that are thought to be closely related to Title I programs. These school characteristics were derived from data on their students as well as from questionnaire responses by school principals and teachers.

The characteristics examined are: (1) minority concentration in the school. Two estimates of this concentration were available, one was calculated based on teacher's record on the Student Background Checklist (SBC) during the 1976-77 SES data collection year, and the other was based on the principal's report in the 1975 survey for planning of the SES study. The two estimates are labeled as '% non-white' and 'principal's estimate', respectively. The correlation between these two variables is .98. (2) Poverty concentration. Three indices for this concentration were available. In the 1975 principal survey, principals reported their estimates either for the percent of students who met Title I eligibility (poverty) criteria or percent of students participating in Free-lunch programs. The latter is more readily available and is highly correlated with the number of students from low-income families. Since some principal reported both estimates and some only one of them, we decided to take the larger of the two estimates when both were provided. This index is labeled as 'principal's estimate'. The second is based on the teacher's report for each student on the SBC concerning his/her participation in Free- or Reduced-Priced lunch programs and is labeled as '% Free-lunch'. The third is the most direct information available but is based on information on a sample (sometimes small) of students in the schools. The percentage of students in the sample whose family economic condition met the poverty criteria employed in the Federal Title I allocation formula is used as the index and is labeled as '% poor/AFDC'. The intercorrelations of these indices are .78 between principal's estimate and % poor/AFDC, .84 between % Free-lunch and % poor/AFDC, and .87 between principal's estimate and % Free-lunch. Since the income criteria for participation in Free-lunch programs is generally looser than for Title I funds allocation, % Free-lunch tends to be larger than % poor/AFDC for a given school. Multiple indicators are used here in order to check the consistency of the results. (3) Concentration of low-achievers. Percentages of students who scored at or below the 25th and who scored at or below the 50th percentiles in basic skills are obtained for each school and used for the respective definition of low-achievement in the present analysis. (4) Student mobility rate. This is the sum of the proportions of students moved to and from the schools during the school year as reported by the school principal in 1976. It was thought that instability of student body may affect the school's ability to accurately determine the student's achievement level for Title I selection. (5) Parent/community involvement in school programs. This is a composite index based on the school principal's and teachers' descriptions of the involvement by the parents and community members in the school's regular as well as Title I programs. This variable appears to contain largely noise and therefore does not differ much among schools. (6) School size. This is the total enrollment in grade 1-6 as available in the SES school records. (7) Title I program size. This is the count of students in grade 1-6 who received Title I services in reading or math or both during the school year 1976-77. Schools that have more Title I students are expected to have more resources to operate the program formally and adhere more closely to the regulations. (8) Use of teacher recommendation in CE selection. Teachers generally have very good information on student's educational need and their judgment can often complement the achievement test scores in correctly identifying low-achieving students for Title I assistance.

Additionally, the geographical locations of the schools are also examined to see if there are systematic regional differences in student selection for Title I services.

The percentage of regular achievers enrolled in Title I programs is obtained as an average over the grades for which there were Title I services in the school. Thus if a school did not provide Title I services in certain grades, their regular achievers would not contribute to the denominator for calculating this percentage. The national projection for this percentage tends to be deceptively low because it includes regular achievers from schools and grades that did not have Title I services in the calculation for the percentage.

Title I schools are divided into four groups in terms of this percentage: 0-5%, 6-10%, 11-20%, and 21-100%. The category boundaries were chosen based on the national projection of this percentage and relevant information reported in earliest SES reports (#5 and #13). The national projections are 9.1% and 4.5% for the quartile and median definitions of low-achievement, respectively. Previous analysis suggested that differences in school characteristics are observed primarily between the schools having less than 20% and those having more than 20% of regular achievers enrolled in Title I.

The four groups of Title I schools are compared with respect to the aforementioned school characteristics. The purpose of this analysis is to find out what school characteristics are systematically associated with tendency to extend services to those who are not low-achieving. If there are systematic differences between schools with low and high mistargeting rates, policies may be proposed to aid in reducing mistargeting in future program implementations.

The results for the seven school characteristics that are measured on a continuous scale are summarized in Table 9 (9a using the quartile definition for low-achievement and 9b using the median definition). The results are similar for the two definitions of low-achievement. It can be seen from these tables that the major differences lie in that schools with more than 20% of their regular achievers enrolled in Title I, on the average, have higher minority concentration, higher poverty concentration, larger percentage of low-achievers, and larger Title I programs. This result appears counter-intuitive because these are the very schools that Title I intended to serve and would be expected to have effective selection procedures. A closer look reveals that this finding is largely a reflection that these schools also tend to select more students into the Title I programs and therefore may be expected to also serve proportionally more regular achievers due to selection errors caused by the imperfect correlation between achievement levels determined by the schools and by the CTBS scores. Furthermore, if a school has a relatively smaller number of regular achievers, a few mistargeted cases can show up as a high percentage of mistargeting. For this reason, we seek to clarify the finding in Table 9 by dividing the schools into four categories of mistargeting index.

Following a similar line of reasoning presented in Question 3, we form two dichotomies of the schools: one based on the percentage of regular achievers enrolled in Title I (labeled as index 'A') and one based on the percentage of Title I students who are not low-achievers (labeled as index 'B'). Each dichotomy employs a cutoff as determined by the national projection of the respective index. Under the quartile definition of low-achievement, Index A is dichotomized at 10% (rounded from 9.1%) and Index B is dichotomized at 45% (rounded from 46.5%). For the median definition, Index A is dichotomized at 5% (rounded from 4.5%) and Index B is dichotomized at 15% (rounded from 14.5%).

The comparisons of school characteristics for the resulting four categories of Title I schools are summarized in Table 10. From the third column of this table ('High A/Low B' category), it is clear that it is the schools that have high percentage of regular achievers in Title I programs but low percentage of Title I students who are regular achievers that exhibit the typical characteristics of schools that are the target of Title I programs. For these schools, more students are enrolled in Title I and more regular achievers are expected to be also selected as a result of selection errors. Because there would also be relatively smaller number of regular achievers in these schools, the index A may tend to be exaggerated. This explains the apparent paradox found in Table 9. The high correlation between percentage of students selected for Title I and percentage of regular achievers enrolled in Title I (.85 with the quartile definition and .73 with the median definition) supports this explanation.

On the other hand, the schools in the 'High A/High B' category tend to have large number of regular achievers and small number of Title I students so that each false selection (regular achievers being enrolled in Title I) would account only for a small fraction of regular achievers. Thus if there is a high percentage of regular achievers in Title I (High A), they will represent a larger proportion of Title I students (High B).

Similar comparisons of school characteristics are also made based on separate mistargeting categories for reading and math programs. In these separate analyses, we have made some modifications by dropping the school characteristics that do not appear to differ among schools with different degree of mistargeting in Title I services, and adding other characteristics that may shed new light on the differences among these schools. The new variables included in these separate analyses (but not in the preceding analysis for basic skill program) are: (1) Number of students in the school who scored at or below the 25th percentile, number who scored between the 26th and 50th percentile, and number who scored above the 50th percentile. (2) Numbers of Title I students who scored at or below the 25th percentile, who scored between the 26th and 50th percentile, and who scored above the 50th percentile. (3) Percent of students from families with income below the 1976 Orshansky cutoff.

The mistargeting index 'A' is defined separately for reading and math on the basis of the school's percentage of regular achievers (scored above the 25th percentile) who received Title I services in the respective subject area. Index 'B' is also separately defined for reading and math on the basis of percentage of Title I students who scored above the 25th percentile in the respective subject area. For reading, index 'A' is dichotomized at 10% and index'B' is dichotomized at 45% with reference to national projections. For math, index 'A' is also dichotomized at 10% (substantially greater than national projection of 4.9%, because this national figure is deceptively low as many schools did not provide Title I services in math), and index 'B' is dichotomized at 50%.

The results for these separate analyses are summarized in Table 10c for the reading program and in Table 10d for the math program. The findings are similar to that obtained in the earlier analysis for the combined basic skills program. Schools having a high percentage of regular achievers (above the 25th percentile) in Title I reading/math programs but a low percentage of Title I students who are regular achievers clearly exhibit the typical characteristics of schools that are the target of Title I programs. From these tables, it may be seen that schools in this category (High A/Low B) also have a much larger number of Title I students who scored at or below the 25th percentile, while both schools in the two 'High A' categories also have a considerably larger number of Title I students who scored between the 26th and 50th percentile. Although less pronounced, schools in the 'High A' categories also have more Title I students who scored above the median. This finding is again primarily a reflection of selection error (more students who are low-achieving are served and at the same time a few regular students are also served).

Table 11 presents the comparisons among the four groups of Title I schools formed in terms of percentage of regular achievers enrolled in Title I with respect to their use of teacher recommendation in CE selection. Table 12 presents the same comparisons among the four categories of Title I schools formed by crossing the two dichotomies of mistargeting indices. Both tables reveal a similar relationship between use of teacher recommendation in CE selection and the tendency to mistarget Title I services. It suggests that schools using teacher recommendation to aid in the student selection tend to do better in minimizing false selection. This finding can be attributed to the contribution of teacher's knowledge on the student's achievement to accurate determination of achievement level. Under the median definition of low-achievement, this relationship is no longer clear presumably because with this definition the accuracy of the achievement classification is sufficiently high and teacher's knowledge does not add to the improvement in accuracy.

Finally, the relationship between mistargeting and geographic regions is examined in Tables 13 and 14 for the two different groupings of Title I schools. Partially due to the small number of Title I schools in each of the 10 regions, no systematic association between school's geographic location and their tendency for false selection in Title I can be discerned from the tables.

## Table 1. National Projections of Percent of Elementary Students Who received Title I or Other Compensatory Services in 1976-77 School Year, by Economic and Achievement Status

### Table 1a. Based on Basic skill Total and Quartile Definition (Grade 1-6, Low-Achieving = At or Below 25th Percentile)

| | Economic and Achievement Status | | | |
|---|---|---|---|---|
| Selection for CE | Poor/ Low-achiever | Non-poor/ Low-Achiever | Poor/ Regular | Non-poor/ Regular |
| Title I/ TI+Other | 40.7%<br>(760K) | 26.4%<br>(817K) | 20.2%<br>(461K) | 7.1%<br>(905K) |
| Other CE Only | 16.5%<br>(308K) | 16.7%<br>(515K) | 11.2%<br>(256K) | 9.2%<br>(1,175K) |
| NO CE in CE Sch. | 36.8%<br>(688K) | 44.6%<br>(1,381K) | 62.3%<br>(1,423K) | 71.6%<br>(9,137K) |
| NO CE in Non-CE Sch. | 6.0%<br>(112K) | 12.4%<br>(383K) | 6.4%<br>(145K) | 12.1%<br>(1,543K) |
| Total | 100.0%<br>(1,868K) | 100.1%<br>(3,096K) | 100.1%<br>(2,285K) | 100.0%<br>(12,760K) |

### Table 1b (Grade 1-6, Low-Achieving = At or Below 25th Percentile)

| | Selection for CE Services | | | |
|---|---|---|---|---|
| Economic and Achievement Status | Title I/ TI+Other | Other CE Only | NO CE in CE Sch. | NO CE in NON-CE Sch. |
| Poor/ Low-Achiever | 25.8%<br>(760K) | 13.7%<br>(308K) | 5.4%<br>(688K) | 5.1%<br>(112K) |
| Non-Poor/ Low-Achiever | 27.7%<br>(817K) | 22.9%<br>(515K) | 10.9%<br>(1,381K) | 17.5%<br>(383K) |
| Poor/ Regular | 15.7%<br>(461K) | 11.3%<br>(256K) | 11.3%<br>(1,423K) | 6.7%<br>(145K) |
| Non-Poor/ Regular | 30.8%<br>(905K) | 52.1%<br>(1,175K) | 72.4%<br>(9,137K) | 70.7%<br>(1,543K) |
| Total | 100.0%<br>(2,943K) | 100.0%<br>(2,254K) | 100.0%<br>(12,629K) | 100.0%<br>(2,183K) |

## Table 2. National Projections of Percent of Elementary Students Who received Title I or Other Compensatory Services in 1976-77 School Year, by Economic and Achievement Status

### Table 2a. Based on Basic skill Total and Median Definition (Grade 1-6, Low-Achieving = At or Below 50th Percentile)

| | Economic and Achievement Status | | | |
|---|---|---|---|---|
| Selection for CE | Poor/ Low-achiever | Non-poor/ Low-Achiever | Poor/ Regular | Non-poor/ Regular |
| Title I/ TI+Other | 36.4%<br>(1,112K) | 20.4%<br>(1,378K) | 10.0%<br>(111K) | 3.8%<br>(345K) |
| Other CE Only | 15.2%<br>(462K) | 14.7%<br>(996K) | 9.1%<br>(100K) | 7.6%<br>(694K) |
| NO CE in CE Sch. | 42.5%<br>(1,296K) | 52.6%<br>(3,556K) | 73.8%<br>(813K) | 76.6%<br>(6,960K) |
| NO CE in Non-CE Sch. | 5.9%<br>(179K) | 12.3%<br>(835K) | 7.1%<br>(78K) | 12.0%<br>(1,090K) |
| Total | 100.0%<br>(3,049K) | 100.0%<br>(6,765K) | 100.0%<br>(1,102K) | 100.0%<br>(9,089K) |

### Table 2b (Grade 1-6, Low-Achieving = At or Below 50th Percentile)

| | Selection for CE Services | | | |
|---|---|---|---|---|
| Economic and Achievement Status | Title I/ TI+Other | Other CE Only | NO CE in CE Sch. | NO CE in NON-CE Sch. |
| Poor/ Low-Achiever | 37.8%<br>(1,112K) | 20.5%<br>(462K) | 10.3%<br>(1,296K) | 8.2%<br>(179K) |
| Non-Poor/ Low-Achiever | 46.8%<br>(1,378K) | 44.2%<br>(996K) | 28.2%<br>(3,556K) | 38.3%<br>(835K) |
| Poor/ Regular | 3.8%<br>(111K) | 4.4%<br>(100K) | 6.4%<br>(813K) | 3.6%<br>(78K) |
| Non-Poor/ Regular | 11.7%<br>(345K) | 30.8%<br>(694K) | 55.1%<br>(6,960K) | 49.9%<br>(1,090K) |
| Total | 100.1%<br>(2,946K) | 99.9%<br>(2,252K) | 100.0%<br>(12,625K) | 100.0%<br>(2,182K) |

## Table 3. National Projections of Percent of Elementary Students Who received Title I or Other Compensatory Services in 1976-77 School Year, by Economic and Achievement Status

### Table 3a. Based on Basic skill Total and Quartile Definition (Grade 2-6, Low-Achieving = At or Below 25th Percentile)

| | Economic and Achievement Status | | | |
|---|---|---|---|---|
| Selection for CE | Poor/ Low-achiever | Non-poor/ Low-Achiever | Poor/ Regular | Non-poor/ Regular |
| Title I/ TI+Other | 42.2%<br>(673K) | 30.4%<br>(739K) | 18.9%<br>(344K) | 7.1%<br>(745K) |
| Other CE Only | 16.1%<br>(257K) | 18.1%<br>(439K) | 10.7%<br>(194K) | 8.8%<br>(929K) |
| NO CE in CE Sch. | 35.6%<br>(567K) | 38.7%<br>(939K) | 63.8%<br>(1,162K) | 71.4%<br>(7,509K) |
| NO CE in Non-CE Sch. | 6.1%<br>(96K) | 12.8%<br>(310K) | 6.7%<br>(121K) | 12.7%<br>(1,339K) |
| Total | 100.0%<br>(1,593K) | 100.0%<br>(2,427K) | 100.1%<br>(1,821K) | 100.0%<br>(10,522K) |

### Table 3b (Grade 2-6, Low-Achieving = At or Below 25th Percentile)

| | Selection for CE Services | | | |
|---|---|---|---|---|
| Economic and Achievement Status | Title I/ TI+Other | Other CE Only | NO CE in CE Sch. | NO CE in NON-CE Sch. |
| Poor/ Low-Achiever | 26.9%<br>(673K) | 14.2%<br>(257K) | 5.6%<br>(567K) | 5.2%<br>(96K) |
| Non-Poor/ Low-Achiever | 29.5%<br>(739K) | 24.2%<br>(439K) | 9.2%<br>(939K) | 16.6%<br>(310K) |
| Poor/ Regular | 13.8%<br>(344K) | 10.7%<br>(194K) | 11.4%<br>(1,162K) | 6.5%<br>(121K) |
| Non-Poor/ Regular | 29.8%<br>(745K) | 51.0%<br>(929K) | 73.8%<br>(7,509K) | 71.7%<br>(1,339K) |
| Total | 100.0%<br>(2,501K) | 100.1%<br>(1,819K) | 100.0%<br>(10,177K) | 100.0%<br>(1,866K) |

## Table 3. National Projections of Percent of Elementary Students Who Received Title I or Other Compensatory Services in 1976-77 School Year, by Economic and Achievement Status

### Table 3c. Based on Reading Achievement and CE Status (Grade 2-6)

Poor: Family Income at or Below the 1976 Orshansky Poverty Cutoff
Low-Achieving: Scored At or Below the 25th Percentile

| Selection for CE in Reading | Economic and Reading Achievement Status | | | |
|---|---|---|---|---|
| | Poor/ Low-Achiever | Non-Poor/ Low-achiever | Poor/ Regular | Non-Poor/ Regular |
| Title I/ TI+Other | 37.6%<br>(484K) | 26.3%<br>(696K) | 16.8%<br>(250K) | 6.5%<br>(711K) |
| Other CE Only | 16.6%<br>(214K) | 18.3%<br>(483K) | 9.9%<br>(148K) | 8.1%<br>(885K) |
| No CE in CE Sch. | 39.6%<br>(511K) | 43.2%<br>(1,141K) | 66.3%<br>(987K) | 73.0%<br>(7,987K) |
| NO CE in Non-CE Sch. | 6.3%<br>(81K) | 12.2%<br>(322K) | 6.9%<br>(103K) | 12.5%<br>(1,364K) |
| Total | 100.1%<br>(1,290K) | 100.0%<br>(2,642K) | 99.9%<br>(1,488K) | 100.1%<br>(10,947K) |

### Table 3d. (Grade 2-6, 25th Percentile, and Orshansky Poverty Cutoff)

| Economic and Reading Achievement Status | Selection for Reading CE Services | | | |
|---|---|---|---|---|
| | Title I/ TI+Other | Other CE Only | No CE in CE Sch. | No CE in Non-CE Sch. |
| Poor/ Low-Achiever | 22.6%<br>(484K) | 12.4%<br>(214K) | 4.8%<br>(511K) | 4.3%<br>(81K) |
| Non-Poor/ Low-Achiever | 32.5%<br>(696K) | 27.9%<br>(483K) | 10.7%<br>(1,141K) | 17.2%<br>(322K) |
| Poor/ Regular | 11.7%<br>(250K) | 8.5%<br>(148K) | 9.3%<br>(987K) | 5.5%<br>(103K) |
| Non-Poor/ Regular | 33.2%<br>(711K) | 51.2%<br>(885K) | 75.2%<br>(7,987K) | 73.0%<br>(1,364K) |
| Total | 100.0%<br>(2,141K) | 100.0%<br>(1,730K) | 100.0%<br>(10,626K) | 100.0%<br>(1,870K) |

## Table 3. National Projections of Percent of Elementary Students Who Received Title I or Other Compensatory Services in 1976-77 School Year, by Economic and Achievement Status

### Table 3e. Based on Reading Achievement and CE Status (Grade 2-6)

Poor: Meeting the Poverty Criteria Used for Allocating TI Funds
Low-Achieving: Scored At or Below the 25th Percentile

| Selection for CE in Reading | Economic and Reading Achievement Status<br>Poor/ Low-Achiever | Non-Poor/ Low-achiever | Poor/ Regular | Non-Poor/ Regular |
|---|---|---|---|---|
| Title I/ TI+Other | 36.6%<br>(565K) | 25.7%<br>(618K) | 16.2%<br>(304K) | 6.2%<br>(657K) |
| Other CE Only | 17.0%<br>(263K) | 18.3%<br>(439K) | 10.5%<br>(198K) | 7.9%<br>(838K) |
| No CE in CE Sch. | 40.5%<br>(624K) | 43.1%<br>(1,035K) | 66.6%<br>(1,251K) | 73.1%<br>(7,707K) |
| NO CE in Non-CE Sch. | 5.9%<br>(91K) | 12.9%<br>(309K) | 6.7%<br>(126K) | 12.7%<br>(1,338K) |
| Total | 100.0%<br>(1,543K) | 100.0%<br>(2,401K) | 100.0%<br>(1,879K) | 99.9%<br>(10,540K) |

### Table 3f. (Grade 2-6, 25th Percentile, and Title I Poverty Criteria)

| Economic and Reading Achievement Status | Selection for Reading CE Services<br>Title I/ TI+Other | Other CE Only | No CE in CE Sch. | No CE in Non-CE Sch. |
|---|---|---|---|---|
| Poor/ Low-Achiever | 26.4%<br>(565K) | 15.1%<br>(263K) | 5.9%<br>(624K) | 4.9%<br>(91K) |
| Non-Poor/ Low-Achiever | 28.8%<br>(618K) | 25.3%<br>(439K) | 9.7%<br>(1,035K) | 16.6%<br>(309K) |
| Poor/ Regular | 14.2%<br>(304K) | 11.3%<br>(198K) | 11.8%<br>(1,251K) | 6.8%<br>(126K) |
| Non-Poor/ Regular | 30.6%<br>(657K) | 48.2%<br>(838K) | 72.6%<br>(7,707K) | 71.7%<br>(1,338K) |
| Total | 100.0%<br>(2,144K) | 99.9%<br>(1,738K) | 100.0%<br>(10,617K) | 100.0%<br>(1,864K) |

Table 3. National Projections of Percent of Elementary Students Who Received Title I or Other Compensatory Services in 1976-77 School Year, by Economic and Achievement Status

Table 3g. Based on Math Achievement and CE Status (Grade 2-6)
Poor: Family Income at or Below the 1976 Orshansky Poverty Cutoff
Low-Achieving: Scored At or Below the 25th Percentile

| Selection for CE in Math | Economic and Math Achievement Status<br>Poor/ Low-Achiever | Non-Poor/ Low-achiever | Poor/ Regular | Non-Poor/ Regular |
|---|---|---|---|---|
| Title I/ TI+Other | 25.1%<br>(299K) | 11.8%<br>(327K) | 11.9%<br>(189K) | 3.9%<br>(419K) |
| Other CE Only | 13.6%<br>(162K) | 13.5%<br>(375K) | 10.5%<br>(167K) | 7.2%<br>(780K) |
| No CE in CE Sch. | 55.1%<br>(657K) | 62.7%<br>(1,738K) | 70.7%<br>(1,123K) | 76.4%<br>(8,259K) |
| NO CE in Non-CE Sch. | 6.2%<br>(74K) | 12.0%<br>(334K) | 6.9%<br>(110K) | 12.5%<br>(1,353K) |
| Total | 100.0%<br>(1,192K) | 100.0%<br>(2,774K) | 100.0%<br>(1,589K) | 100.0%<br>(10,811K) |

Table 3h. (Grade 2-6, 25th Percentile, and Orshansky Poverty Cutoff)

| Economic and Math Achievement Status | Selection for Math CE Services<br>Title I/ TI+Other | Other CE Only | No CE in CE Sch. | No CE in Non-CE Sch. |
|---|---|---|---|---|
| Poor/ Low-Achiever | 24.2%<br>(299K) | 10.9%<br>(162K) | 5.6%<br>(657K) | 4.0%<br>(74K) |
| Non-Poor/ Low-Achiever | 26.5%<br>(327K) | 25.3%<br>(375K) | 14.8%<br>(1,738K) | 17.9%<br>(334K) |
| Poor/ Regular | 15.3%<br>(189K) | 11.3%<br>(167K) | 9.5%<br>(1,123K) | 5.9%<br>(110K) |
| Non-Poor/ Regular | 34.0%<br>(419K) | 52.6%<br>(780K) | 70.1%<br>(8,259K) | 72.3%<br>(1,353K) |
| Total | 100.0%<br>(1,234K) | 100.1%<br>(1,484K) | 100.0%<br>(11,777K) | 100.1%<br>(1,871K) |

Table 3. National Projections of Percent of Elementary Students Who Received Title I or Other Compensatory Services in 1976-77 School Year, by Economic and Achievement Status

Table 3i. Based on Math Achievement and CE Status (Grade 2-6)
Poor: Meeting the Poverty Criteria Used for Allocating TI Funds
Low-Achieving: Scored At or Below the 25th Percentile

| Selection for CE in Math | Economic and Math Achievement Status | | | |
|---|---|---|---|---|
| | Poor/ Low-Achiever | Non-Poor/ Low-achiever | Poor/ Regular | Non-Poor/ Regular |
| Title I/ TI+Other | 23.3%<br>(334K) | 11.4%<br>(291K) | 11.4%<br>(227K) | 3.7%<br>(384K) |
| Other CE Only | 14.3%<br>(206K) | 13.2%<br>(336K) | 10.2%<br>(203K) | 7.2%<br>(744K) |
| No CE in CE Sch. | 56.3%<br>(805K) | 62.7%<br>(1,598K) | 71.8%<br>(1,430K) | 76.4%<br>(7,941K) |
| NO CE in Non-CE Sch. | 6.0%<br>(86K) | 12.7%<br>(323K) | 6.6%<br>(132K) | 12.7%<br>(1,325K) |
| Total | 99.9%<br>(1,431K) | 100.0%<br>(2,548K) | 100.0%<br>(1,992K) | 100.0%<br>(10,394K) |

Table 3j. (Grade 2-6, 25th Percentile, and Title I Poverty Criteria)

| Economic and Math Achievement Status | Selection for Math CE Services | | | |
|---|---|---|---|---|
| | Title I/ TI+Other | Other CE Only | No CE in CE Sch. | No CE in Non-CE Sch. |
| Poor/ Low-Achiever | 27.0%<br>(334K) | 13.8%<br>(206K) | 6.8%<br>(805K) | 4.6%<br>(86K) |
| Non-Poor/ Low-Achiever | 23.6%<br>(291K) | 22.6%<br>(336K) | 13.6%<br>(1,598K) | 17.3%<br>(323K) |
| Poor/ Regular | 18.4%<br>(227K) | 13.7%<br>(203K) | 12.1%<br>(1,430K) | 7.1%<br>(132K) |
| Non-Poor/ Regular | 31.0%<br>(384K) | 50.0%<br>(744K) | 67.4%<br>(7,941K) | 71.0%<br>(1,325K) |
| Total | 100.0%<br>(1,236K) | 100.1%<br>(1,489K) | 99.9%<br>(11,774K) | 100.0%<br>(1,866K) |

### Table 4. National Projections of Percent of Elementary Students Who received Title I or Other Compensatory Services in 1976-77 School Year, by Economic and Achievement Status

Table 4a. Based on Basic skill Total and Median Definition (Grade 2-6, Low-Achieving = At or Below 50th Percentile)

| Selection for CE | Economic and Achievement Status<br>Poor/ Low-achiever | Non-poor/ Low-Achiever | Poor/ Regular | Non-poor/ Regular |
|---|---|---|---|---|
| Title I/ TI+Other | 37.3%<br>(963K) | 22.2%<br>(1,211K) | 6.6%<br>(54K) | 3.6%<br>(273K) |
| Other CE Only | 14.7%<br>(380K) | 15.0%<br>(816K) | 8.7%<br>(73K) | 7.4%<br>(553K) |
| NO CE in CE Sch. | 42.2%<br>(1,089K) | 49.8%<br>(2,712K) | 76.7%<br>(640K) | 76.5%<br>(5,737K) |
| NO CE in Non-CE Sch. | 5.9%<br>(152K) | 13.0%<br>(710K) | 8.0%<br>(67K) | 12.5%<br>(939K) |
| Total | 100.1%<br>(2,584K) | 100.0%<br>(5,449K) | 100.0%<br>(834K) | 100.0%<br>(7,502K) |

Table 4b (Grade 2-6, Low-Achieving = At or Below 50th Percentile)

| Economic and Achievement Status | Selection for CE Services<br>Title I/ TI+Other | Other CE Only | NO CE in CE Sch. | NO CE in NON-CE Sch. |
|---|---|---|---|---|
| Poor/ Low-Achiever | 38.5%<br>(963K) | 20.8%<br>(380K) | 10.7%<br>(1,089K) | 8.1%<br>(152K) |
| Non-Poor/ Low-Achiever | 48.4%<br>(1,211K) | 44.8%<br>(816K) | 26.6%<br>(2,712K) | 38.0%<br>(710K) |
| Poor/ Regular | 2.2%<br>(54K) | 4.0%<br>(73K) | 6.3%<br>(640K) | 3.6%<br>(67K) |
| Non-Poor/ Regular | 10.9%<br>(273K) | 30.3%<br>(553K) | 56.4%<br>(5,737K) | 50.3%<br>(939K) |
| Total | 100.0%<br>(2,501K) | 99.9%<br>(1,822K) | 100.0%<br>(10,178K) | 100.0%<br>(1,868K) |

Table 4. National Projections of Percent of Elementary Students Who Received Title I or Other Compensatory Services in 1976-77 School Year, by Economic and Achievement Status

Table 4c. Based on Reading Achievement and CE Status (Grade 2-6)
Poor: Family Income at or Below the 1976 Orshansky Poverty Cutoff
Low-Achieving: Scored At or Below the 50th Percentile

| | Economic and Reading Achievement Status | | | |
|---|---|---|---|---|
| Selection for CE in Reading | Poor/ Low-Achiever | Non-Poor/ Low-achiever | Poor/ Regular | Non-Poor/ Regular |
| Title I/ TI+Other | 32.7%<br>(704K) | 20.4%<br>(1,195K) | 4.9%<br>(30K) | 2.7%<br>(210K) |
| Other CE Only | 14.4%<br>(311K) | 14.9%<br>(877K) | 8.1%<br>(50K) | 6.3%<br>(490K) |
| No CE in CE Sch. | 46.7%<br>(1,004K) | 52.3%<br>(3,072K) | 78.8%<br>(492K) | 78.5%<br>(6,057K) |
| NO CE in Non-CE Sch. | 6.2%<br>(132K) | 12.4%<br>(727K) | 8.2%<br>(52K) | 12.4%<br>(959K) |
| Total | 100.0%<br>(2,151K) | 100.0%<br>(5,871K) | 100.0%<br>(624K) | 99.9%<br>(7,716K) |

Table 4d. (Grade 2-6, 50th Percentile, and Orshansky Poverty Cutoff)

| | Selection for Reading CE Services | | | |
|---|---|---|---|---|
| Economic and Reading Achievement Status | Title I/ TI+Other | Other CE Only | No CE in CE Sch. | No CE in Non-CE Sch. |
| Poor/ Low-Achiever | 32.9%<br>(704K) | 18.0%<br>(311K) | 9.5%<br>(1,004K) | 7.1%<br>(132K) |
| Non-Poor/ Low-Achiever | 55.9%<br>(1,195K) | 50.8%<br>(877K) | 28.9%<br>(3,072K) | 38.9%<br>(727K) |
| Poor/ Regular | 1.4%<br>(30K) | 2.9%<br>(50K) | 4.6%<br>(492K) | 2.8%<br>(52K) |
| Non-Poor/ Regular | 9.8%<br>(210K) | 28.3%<br>(490K) | 57.0%<br>(6,057K) | 51.3%<br>(959K) |
| Total | 100.0%<br>(2,139K) | 100.0%<br>(1,728K) | 100.0%<br>(10,625K) | 100.1%<br>(1,870K) |

## Table 4. National Projections of Percent of Elementary Students Who Received Title I or Other Compensatory Services in 1976-77 School Year, by Economic and Achievement Status

### Table 4e. Based on Reading Achievement and CE Status (Grade 2-6)

Poor: Meeting the Poverty Criteria Used for Allocating TI Funds
Low-Achieving: Scored At or Below the 50th Percentile

| Selection for CE in Reading | Economic and Reading Achievement Status: Poor/ Low-Achiever | Non-Poor/ Low-achiever | Poor/ Regular | Non-Poor/ Regular |
|---|---|---|---|---|
| Title I/ TI+Other | 31.8%<br>(824K) | 19.8%<br>(1,079K) | 5.4%<br>(45K) | 2.6%<br>(196K) |
| Other CE Only | 15.1%<br>(391K) | 14.8%<br>(805K) | 8.3%<br>(68K) | 6.3%<br>(471K) |
| No CE in CE Sch. | 47.2%<br>(1,226K) | 52.5%<br>(2,861K) | 78.5%<br>(649K) | 78.5%<br>(5,882K) |
| NO CE in Non-CE Sch. | 5.9%<br>(154K) | 12.9%<br>(705K) | 7.8%<br>(65K) | 12.6%<br>(943K) |
| Total | 100.0%<br>(2,595K) | 100.0%<br>(5,450K) | 100.0%<br>(827K) | 100.0%<br>(7,492K) |

### Table 4f. (Grade 2-6, 50th Percentile, and Title I Poverty Criteria)

| Economic and Reading Achievement Status | Selection for Reading CE Services: Title I/ TI+Other | Other CE Only | No CE in CE Sch. | No CE in Non-CE Sch. |
|---|---|---|---|---|
| Poor/ Low-Achiever | 38.4%<br>(824K) | 22.5%<br>(391K) | 11.6%<br>(1,226K) | 8.2%<br>(154K) |
| Non-Poor/ Low-Achiever | 50.3%<br>(1,079K) | 46.4%<br>(805K) | 26.9%<br>(2,861K) | 37.8%<br>(705K) |
| Poor/ Regular | 2.1%<br>(45K) | 4.0%<br>(68K) | 6.1%<br>(649K) | 3.4%<br>(65K) |
| Non-Poor/ Regular | 9.1%<br>(196K) | 27.1%<br>(471K) | 55.4%<br>(5,882K) | 50.6%<br>(943K) |
| Total | 99.9%<br>(2,144K) | 100.0%<br>(1,735K) | 100.0%<br>(10,618K) | 100.0%<br>(1,867K) |

## Table 4. National Projections of Percent of Elementary Students Who Received Title I or Other Compensatory Services in 1976-77 School Year, by Economic and Achievement Status

### Table 4g. Based on Math Achievement and CE Status (Grade 2-6)
Poor: Family Income at or Below the 1976 Orshansky Poverty Cutoff
Low-Achieving: Scored At or Below the 50th Percentile

| Selection for CE in Math | Economic and Math Achievement Status | | | |
|---|---|---|---|---|
| | Poor/ Low-Achiever | Non-Poor/ Low-achiever | Poor/ Regular | Non-Poor/ Regular |
| Title I/ TI+Other | 21.4%<br>(425K) | 9.7%<br>(575K) | 7.9%<br>(62K) | 2.2%<br>(171K) |
| Other CE Only | 13.0%<br>(258K) | 11.0%<br>(649K) | 8.8%<br>(70K) | 6.6%<br>(507K) |
| No CE in CE Sch. | 59.4%<br>(1,178K) | 66.5%<br>(3,928K) | 75.5%<br>(601K) | 79.0%<br>(6,070K) |
| NO CE in Non-CE Sch. | 6.1%<br>(122K) | 12.7%<br>(752K) | 7.8%<br>(62K) | 12.2%<br>(934K) |
| Total | 99.9%<br>(1,983K) | 99.9%<br>(5,904K) | 100.0%<br>(795K) | 100.0%<br>(7,682K) |

### Table 4h. (Grade 2-6, 50th Percentile, and Orshansky Poverty Cutoff)

| Economic and Math Achievement Status | Selection for Math CE Services | | | |
|---|---|---|---|---|
| | Title I/ TI+Other | Other CE Only | No CE in CE Sch. | No CE in Non-CE Sch. |
| Poor/ Low-Achiever | 34.4%<br>(425K) | 17.4%<br>(258K) | 10.0%<br>(1,178K) | 6.5%<br>(122K) |
| Non-Poor/ Low-Achiever | 46.6%<br>(575K) | 43.7%<br>(649K) | 33.3%<br>(3,928K) | 40.2%<br>(752K) |
| Poor/ Regular | 5.1%<br>(62K) | 4.7%<br>(70K) | 5.1%<br>(601K) | 3.3%<br>(62K) |
| Non-Poor/ Regular | 13.9%<br>(171K) | 34.2%<br>(507K) | 51.5%<br>(6,070K) | 49.9%<br>(934K) |
| Total | 100.0%<br>(1,233K) | 100.0%<br>(1,484K) | 99.9%<br>(11,777K) | 99.9%<br>(1,870K) |

## Table 4. National Projections of Percent of Elementary Students Who Received Title I or Other Compensatory Services in 1976-77 School Year, by Economic and Achievement Status

### Table 4i. Based on Math Achievement and CE Status (Grade 2-6)

Poor: Meeting the Poverty Criteria Used for Allocating TI Funds
Low-Achieving: Scored At or Below the 50th Percentile

| Selection for CE in Math | Economic and Math Achievement Status | | | |
|---|---|---|---|---|
| | Poor/ Low-Achiever | Non-Poor/ Low-achiever | Poor/ Regular | Non-Poor/ Regular |
| Title I/ TI+Other | 20.1%<br>(484K) | 9.4%<br>(517K) | 7.6%<br>(76K) | 2.1%<br>(158K) |
| Other CE Only | 13.3%<br>(322K) | 10.7%<br>(591K) | 8.6%<br>(87K) | 6.6%<br>(489K) |
| No CE in CE Sch. | 60.8%<br>(1,463K) | 66.5%<br>(3,657K) | 76.0%<br>(771K) | 79.0%<br>(5,882K) |
| NO CE in Non-CE Sch. | 5.8%<br>(138K) | 13.4%<br>(734K) | 7.9%<br>(79K) | 12.3%<br>(914K) |
| Total | 100.0%<br>(2,407K) | 100.0%<br>(5,499K) | 100.1%<br>(1,013K) | 100.0%<br>(7,443K) |

Table 3j. (Grade 2-6, 50th Percentile, and Title I Poverty Criteria)

| Economic and Math Achievement Status | Selection for Math CE Services | | | |
|---|---|---|---|---|
| | Title I/ TI+Other | Other CE Only | No CE in CE Sch. | No CE in Non-CE Sch. |
| Poor/ Low-Achiever | 39.2%<br>(484K) | 21.6%<br>(322K) | 12.4%<br>(1,463K) | 7.4%<br>(138K) |
| Non-Poor/ Low-Achiever | 41.8%<br>(517K) | 39.7%<br>(591K) | 31.1%<br>(3,657K) | 39.3%<br>(734K) |
| Poor/ Regular | 6.2%<br>(76K) | 5.9%<br>(87K) | 6.5%<br>(771K) | 4.3%<br>(79K) |
| Non-Poor/ Regular | 12.8%<br>(158K) | 32.9%<br>(489K) | 50.0%<br>(5,882K) | 49.0%<br>(914K) |
| Total | 100.0%<br>(1,235K) | 100.1%<br>(1,489K) | 100.0%<br>(11,773K) | 100.0%<br>(1,865K) |

Table 5. National Projections of Percent of Elementary Students Who received Title I or Other Compensatory Services in 1976-77 School Year, by Economic and Achievement Status (From Table V-4 of SES Technical Report #2)

Table 5a. Based on Basic skill Total and Grade-Equivalent Definition (Grade 2-6, Low-Achieving = One or More Grade Level Below)

| Selection for CE | Economic and Achievement Status<br>Poor/ Low-achiever | Non-poor/ Low-Achiever | Poor/ Regular | Non-poor/ Regular |
|---|---|---|---|---|
| Title I/ TI+Other | 39.9%<br>(575K) | 25.9%<br>(606K) | 22.3%<br>(445K) | 8.2%<br>(868K) |
| Other CE Only | 13.9%<br>(200K) | 15.9%<br>(372K) | 7.7%<br>(154K) | 8.3%<br>(879K) |
| NO CE in CE Sch. | 39.5%<br>(569K) | 43.2%<br>(1,011K) | 61.9%<br>(1,236K) | 66.8%<br>(7,073K) |
| NO CE in Non-CE Sch. | 6.7%<br>(96K) | 15.0%<br>(351K) | 8.1%<br>(162K) | 16.7%<br>(1,768K) |
| Total | 100.0%<br>(1,440K) | 100.0%<br>(2,340K) | 100.0%<br>(1,997K) | 100.0%<br>(10,588K) |

Table 5b (Grade 2-6, Low-Achieving = One or More Grade Level Below)

| Economic and Achievement Status | Selection for CE Services<br>Title I/ TI+Other | Other CE Only | NO CE in CE Sch. | NO CE in NON-CE Sch. |
|---|---|---|---|---|
| Poor/ Low-Achiever | 23.1%<br>(575K) | 12.5%<br>(200K) | 5.8%<br>(569K) | 4.0%<br>(96K) |
| Non-Poor/ Low-Achiever | 24.3%<br>(606K) | 23.2%<br>(372K) | 10.2%<br>(1,011K) | 14.8%<br>(351K) |
| Poor/ Regular | 17.8%<br>(445K) | 9.6%<br>(154K) | 12.5%<br>(1,236K) | 6.8%<br>(162K) |
| Non-Poor/ Regular | 34.8%<br>(868K) | 54.8%<br>(879K) | 71.5%<br>(7,073K) | 74.4%<br>(1,768K) |
| Total | 100.0%<br>(2,494K) | 100.1%<br>(1,605K) | 100.0%<br>(9,889K) | 100.0%<br>(2,377K) |

Table 6. Number of Title I Schools Having Various Percentages of Title I Students (Grade 1-6) Who are Poor/AFDC (Meeting Federal Title I Allocation Criteria)

Table 6a. (all 156 Title I Schools)

| Percentage of Title I Students Who Are Poor/AFDC | Number of Title I Schools | Percent (Cumulative) of Title I Schools |
|---|---|---|
| 0-20% | 56 | 35.9% ( 35.9%) |
| 21-40% | 42 | 26.9% ( 62.8%) |
| 41-60% | 29 | 18.6% ( 81.4%) |
| 61-80% | 21 | 13.5% ( 94.9%) |
| 81-100% | 8 | 5.1% (100.0%) |
| Total | 156 | 100.0% |

Table 6b. (71 Title I Schools That Have 10 or More Title I Students in the Sample)

| Percentage of Title I Students Who Are Poor/AFDC | Number of Title I Schools | Percent (Cumulative) of Title I Schools |
|---|---|---|
| 0-20% | 19 | 26.8% ( 26.8%) |
| 21-40% | 22 | 31.0% ( 57.7%) |
| 41-60% | 16 | 22.5% ( 80.3%) |
| 61-80% | 11 | 15.5% ( 95.8%) |
| 81-100% | 3 | 4.2% (100.0%) |
| Total | 71 | 100.0% |

### Table 7. Number of Title I Schools Having Various Percentages of Title I Students Who are Low-achieving in Basic Skills

Table 7a. (Scoring At or Below the 25th Percentile as Low-Achieving)

| Grade Level | Percentage of Title I Students Who are Low-Achieving | At or Below 25th %ile as Low-Achieveing | |
|---|---|---|---|
| | | Number of Title I Schools | Percent (Cumulative) of Title I Schools |
| 1<br>N=113 | 0-25% | 36 | 31.9% ( 31.9%) |
| | 26-50% | 42 | 37.2% ( 69.0%) |
| | 51-75% | 28 | 24.8% ( 93.8%) |
| | 76-100% | 7 | 6.2% (100.0%) |
| 2<br>N=134 | 0-25% | 32 | 23.9% ( 23.9%) |
| | 26-50% | 34 | 25.4% ( 49.3%) |
| | 51-75% | 36 | 26.9% ( 76.1%) |
| | 76-100% | 32 | 23.9% (100.0%) |
| 3<br>N=139 | 0-25% | 16 | 11.5% ( 11.5%) |
| | 26-50% | 36 | 25.9% ( 37.4%) |
| | 51-75% | 38 | 27.3% ( 64.7%) |
| | 76-100% | 49 | 35.3% (100.0%) |
| 4<br>N=130 | 0-25% | 26 | 20.0% ( 20.0%) |
| | 26-50% | 46 | 35.4% ( 55.4%) |
| | 51-75% | 38 | 29.2% ( 84.6%) |
| | 76-100% | 20 | 15.4% (100.0%) |
| 5<br>N=121 | 0-25% | 20 | 16.5% ( 16.5%) |
| | 26-50% | 28 | 23.1% ( 39.7%) |
| | 51-75% | 41 | 33.9% ( 73.6%) |
| | 76-100% | 32 | 26.4% (100.0%) |
| 6<br>N= 99 | 0-25% | 11 | 11.1% ( 11.1%) |
| | 26-50% | 26 | 26.3% ( 37.4%) |
| | 51-75% | 32 | 32.3% ( 69.7%) |
| | 76-100% | 30 | 30.3% (100.0%) |
| 1-6<br>N=156 | 0-25% | 12 | 7.7% ( 7.7%) |
| | 26-50% | 54 | 34.6% ( 42.3%) |
| | 51-75% | 74 | 47.4% ( 89.7%) |
| | 76-100% | 16 | 10.3% (100.0%) |

Table 7. Continued

Table 7b. (Scoring At or Below the 50th Percentile as Low-Achieving)

| Grade Level | Percentage of Title I Students Who are Low-Achieving | At or Below 50th %ile as Low-Achieveing | |
|---|---|---|---|
| | | Number of Title I Schools | Percent (Cumulative) of Title I Schools |
| 1<br>N=113 | 0-25% | 10 | 8.8% ( 8.8%) |
| | 26-50% | 17 | 15.0% ( 23.9%) |
| | 51-75% | 40 | 35.4% ( 59.3%) |
| | 76-100% | 46 | 40.7% (100.0%) |
| 2<br>N=134 | 0-25% | 1 | 0.7% ( 0.7%) |
| | 26-50% | 13 | 9.7% ( 10.4%) |
| | 51-75% | 13 | 9.7% ( 20.1%) |
| | 76-100% | 107 | 79.9% (100.0%) |
| 3<br>N=139 | 0-25% | 2 | 1.4% ( 1.4%) |
| | 26-50% | 8 | 5.8% ( 7.2%) |
| | 51-75% | 12 | 8.6% ( 15.8%) |
| | 76-100% | 117 | 84.2% (100.0%) |
| 4<br>N=130 | 0-25% | 3 | 2.3% ( 2.3%) |
| | 26-50% | 7 | 5.4% ( 7.7%) |
| | 51-75% | 23 | 17.7% ( 25.4%) |
| | 76-100% | 97 | 74.6% (100.0%) |
| 5<br>N=121 | 0-25% | 1 | 0.8% ( 0.8%) |
| | 26-50% | 7 | 5.8% ( 6.6%) |
| | 51-75% | 14 | 11.6% ( 18.2%) |
| | 76-100% | 99 | 81.8% (100.0%) |
| 6<br>N= 99 | 0-25% | 1 | 1.0% ( 1.0%) |
| | 26-50% | 3 | 3.0% ( 4.0%) |
| | 51-75% | 9 | 9.1% ( 13.1%) |
| | 76-100% | 86 | 86.9% (100.0%) |
| 1-6<br>N=156 | 0-25% | 0 | 0.0% ( 0.0%) |
| | 26-50% | 5 | 3.2% ( 3.2%) |
| | 51-75% | 19 | 12.1% ( 15.4%) |
| | 76-100% | 132 | 84.1% (100.0%) |

Table 8. Distribution of Title I Schools by Categories of Targeting Indices ('A' Indicates Percentage of Title I Students Who Are Low-Achieving in Basic Skills, and 'B' Indicates Percentage of Low-Achieving Students Who are Selected for Title I Services)

Table 8a. (Scoring At or Below the 25th Percentile as Low-Achieving, A: Above 50% is High; B: Above 30% is High)

| | | At or Below 25th %ile as Low-Achieveing | |
|---|---|---|---|
| Grade Level | Category of Title I Targeting Indices | Number of Title I Schools | Percent (Cumulative) of Title I Schools |
| 1<br>N=110 | Low A & Low B | 33 | 30.0% ( 30.0%) |
| | Low A & High B | 42 | 38.2% ( 68.2%) |
| | High A & Low B | 12 | 10.9% ( 79.1%) |
| | High A & High B | 23 | 20.9% (100.0%) |
| 2<br>N=128 | Low A & Low B | 14 | 10.9% ( 10.9%) |
| | Low A & High B | 46 | 35.9% ( 46.9%) |
| | High A & Low B | 13 | 10.2% ( 57.0%) |
| | High A & High B | 55 | 43.0% (100.0%) |
| 3<br>N=132 | Low A & Low B | 8 | 6.1% ( 6.1%) |
| | Low A & High B | 37 | 28.0% ( 34.1%) |
| | High A & Low B | 15 | 11.4% ( 45.5%) |
| | High A & High B | 72 | 54.5% (100.0%) |
| 4<br>N=128 | Low A & Low B | 14 | 10.9% ( 10.9%) |
| | Low A & High B | 56 | 43.8% ( 54.7%) |
| | High A & Low B | 7 | 5.5% ( 60.2%) |
| | High A & High B | 51 | 39.8% (100.0%) |
| 5<br>N=117 | Low A & Low b | 13 | 11.1% ( 11.1%) |
| | Low A & High B | 31 | 26.5% ( 37.6%) |
| | High A & Low B | 13 | 11.1% ( 48.7%) |
| | High A & High B | 60 | 51.3% (100.0%) |
| 6<br>N= 98 | Low A & Low B | 11 | 11.2% ( 11.2%) |
| | Low A & High B | 25 | 25.5% ( 36.7%) |
| | High A & Low B | 14 | 14.3% ( 51.0%) |
| | High A & High B | 48 | 49.0% (100.0%) |
| 1-6<br>N=156 | Low A & Low B | 14 | 9.0% ( 9.0%) |
| | Low A & High B | 52 | 33.3% ( 42.3%) |
| | High A & Low B | 24 | 15.4% ( 57.7%) |
| | High A & High B | 66 | 42.3% (100.0%) |

## Table 8. Continued

'A' Indicates Percentage of Title I Students Who Are Low-Achieving in Basic Skills, and 'B' Indicates Percentage of Low-Achieving Students Who are Selected for Title I Services)

Table 8b. (Scoring At or Below the 50th Percentile as Low-Achieving,
A: Above 80% is High; B: Above 25% is High)

| Grade Level | Category of Title I Targeting Indices | At or Below 50th %ile as Low-Achieveing<br>Number of Title I Schools | Percent (Cumulative) of Title I Schools |
|---|---|---|---|
| 1<br>N=113 | Low A & Low B | 33 | 29.2% ( 29.2%) |
| | Low A & High B | 42 | 37.2% ( 66.4%) |
| | High A & Low B | 11 | 9.7% ( 76.1%) |
| | High A & High B | 27 | 23.9% (100.0%) |
| 2<br>N=134 | Low A & Low B | 9 | 6.7% ( 6.7%) |
| | Low A & High B | 31 | 23.1% ( 29.9%) |
| | High A & Low B | 17 | 12.7% ( 42.5%) |
| | High A & High B | 77 | 57.5% (100.0%) |
| 3<br>N=138 | Low A & Low B | 4 | 2.9% ( 2.9%) |
| | Low A & High B | 18 | 13.0% ( 15.9%) |
| | High A & Low B | 22 | 15.9% ( 31.9%) |
| | High A & High B | 94 | 68.1% (100.0%) |
| 4<br>N=129 | Low A & Low B | 7 | 5.4% ( 5.4%) |
| | Low A & High B | 28 | 21.7% ( 27.1%) |
| | High A & Low B | 17 | 13.2% ( 40.3%) |
| | High A & High B | 77 | 59.7% (100.0%) |
| 5<br>N=120 | Low A & Low b | 7 | 5.8% ( 5.8%) |
| | Low A & High B | 17 | 14.2% ( 20.0%) |
| | High A & Low B | 25 | 20.8% ( 40.8%) |
| | High A & High B | 71 | 59.2% (100.0%) |
| 6<br>N= 99 | Low A & Low B | 6 | 6.1% ( 6.1%) |
| | Low A & High B | 11 | 11.1% ( 17.2%) |
| | High A & Low B | 31 | 31.3% ( 48.5%) |
| | High A & High B | 51 | 51.5% (100.0%) |
| 1-6<br>N=156 | Low A & Low B | 11 | 7.1% ( 7.1%) |
| | Low A & High B | 36 | 23.1% ( 30.1%) |
| | High A & Low B | 33 | 21.2% ( 51.3%) |
| | High A & High B | 76 | 48.7% (100.0%) |

## Table 9. Characteristics of Title I Schools That Enroll Various Percentages of Regular-Achieving Students in Title I Programs

Table 9a. (Above the 25th Percentile in Basic Skills as Regular-Achieving)

| Characteristics of Schools | | Percentage of Regular-Achievers Enrolled in Title I Programs | | | | | All Title I Schools |
|---|---|---|---|---|---|---|---|
| | | 0-5% N=18 | 6-10% N=28 | 11-20% N=56 | 21-100% N=54 | | N=156 |
| Minority Concentration | | | | | | | |
| Principal's Est. | Mean | 16.3 | 15.4 | 19.5 | 36.4 | ** | 24.2 |
| (% in 1975-76) | SD | 21.1 | 22.7 | 29.1 | 39.3 | | 32.4 |
| % Non-White | Mean | 21.6 | 16.0 | 20.2 | 38.2 | ** | 25.8 |
| (1976-77) | SD | 27.6 | 22.9 | 29.6 | 40.9 | | 33.8 |
| Poverty Concentration | | | | | | | |
| Principal's Est. | Mean | 24.4 | 28.3 | 37.6 | 48.1 | ** | 38.1 |
| (% in 1975-76) | SD | 18.4 | 21.9 | 25.4 | 30.3 | | 27.1 |
| % Poor/AFDC | Mean | 16.2 | 20.3 | 27.6 | 37.1 | ** | 28.3 |
| (1976-77) | SD | 13.7 | 17.6 | 21.3 | 24.7 | | 22.4 |
| % Free Lunch | Mean | 26.8 | 34.3 | 41.1 | 57.4 | ** | 43.9 |
| (1976-77) | SD | 23.3 | 27.2 | 28.8 | 31.2 | | 30.6 |
| Achievement Level | | | | | | | |
| % At or Below | Mean | 25.3 | 22.5 | 27.3 | 35.5 | ** | 29.0 |
| 25th Percentile | SD | 9.6 | 11.3 | 14.8 | 17.2 | | 15.4 |
| Student Mobility | Mean | 20.4 | 15.1 | 23.6 | 21.0 | | 20.8 |
| % Moved From or To | SD | 12.8 | 14.2 | 23.1 | 22.7 | | 20.7 |
| Extent of Parent/ | Mean | 37.1 | 41.4 | 40.7 | 42.9 | | 41.1 |
| Comm. Involvement | SD | 12.9 | 14.6 | 12.9 | 16.3 | | 14.4 |
| Enrollemnt in | Mean | 347.9 | 320.3 | 323.2 | 275.3 | | 308.9 |
| Grade 1 thru 6 | SD | 158.0 | 193.0 | 203.0 | 184.2 | | 190.0 |
| Title I Students | Mean | 29.7 | 45.6 | 67.4 | 108.4 | ** | 73.3 |
| in Grade 1 thru 6 | SD | 19.0 | 30.6 | 40.8 | 89.6 | | 65.9 |

* indicates significant differences among the four groups of Title I schools at or below the .05 level (before adjustment for design effects).

** indicates significant differences at or below .01 level.

## Table 9. Characteristics of Title I Schools That Enroll Various Percentages of Regular-Achieving Students in Title I Programs

### Table 9b. (Above the 50th Percentile in Basic Skills as Regular-Achieving)

| Characteristics of Schools | | Percentage of Regular-Achievers Enrolled in Title I Programs | | | | | All Title I Schools |
|---|---|---|---|---|---|---|---|
| | | 0-5% N=70 | 6-10% N=42 | 11-20% N=22 | 21-100% N=22 | | N=156 |
| **Minority Concentration** | | | | | | | |
| Principal's Est. (% in 1975-76) | Mean | 18.2 | 22.6 | 24.4 | 46.5 | ** | 24.2 |
| | SD | 26.5 | 33.9 | 32.7 | 38.4 | | 32.4 |
| % Non-White (1976-77) | Mean | 20.2 | 22.8 | 25.3 | 49.9 | ** | 25.8 |
| | SD | 28.2 | 34.4 | 32.8 | 41.2 | | 33.8 |
| **Poverty Concentration** | | | | | | | |
| Principal's Est. (% in 1975-76) | Mean | 32.0 | 40.5 | 38.7 | 52.0 | * | 38.1 |
| | SD | 24.0 | 29.4 | 24.8 | 29.9 | | 27.1 |
| % Poor/AFDC (1976-77) | Mean | 21.7 | 31.9 | 27.2 | 43.2 | ** | 28.3 |
| | SD | 18.7 | 22.4 | 21.2 | 26.5 | | 22.4 |
| % Free Lunch (1976-77) | Mean | 36.2 | 44.6 | 47.0 | 63.9 | ** | 43.9 |
| | SD | 28.3 | 30.8 | 26.1 | 33.3 | | 30.6 |
| **Achievement Level** | | | | | | | |
| % At or Below 50th Percentile | Mean | 52.3 | 53.7 | 55.5 | 65.3 | * | 55.0 |
| | SD | 15.8 | 19.2 | 19.8 | 20.4 | | 18.3 |
| Student Mobility % Moved From or To | Mean | 21.6 | 17.6 | 15.6 | 29.7 | | 20.8 |
| | SD | 19.6 | 16.4 | 17.3 | 30.5 | | 20.7 |
| Extent of Parent/ Comm. Involvement | Mean | 40.0 | 40.1 | 39.7 | 48.1 | | 41.1 |
| | SD | 13.1 | 13.1 | 15.4 | 18.4 | | 14.4 |
| Enrollemnt in Grade 1 thru 6 | Mean | 320.4 | 320.5 | 244.5 | 314.9 | | 308.9 |
| | SD | 174.7 | 221.7 | 169.0 | 191.6 | | 190.0 |
| Title I Students in Grade 1 thru 6 | Mean | 50.6 | 68.3 | 75.5 | 152.9 | ** | 73.3 |
| | SD | 37.8 | 49.5 | 50.0 | 108.0 | | 65.9 |

* indicates significant differences among the four groups of Title I schools at or below the .05 level (before adjustment for design effects).

** indicates significant differences at or below .01 level.

### Table 10. Characteristics of Title I Schools by Categories of Mis-Targeting Indices ('A' Indicates Percentage of Regular-Achievers in Title I Programs, and 'B' Indicates Percentage of Title I Students Who Are Regular-Achieving)

### Table 10a. (Above the 25th Percentile as Regular-Achieving, A: Above 10% is High; B: Above 45% is High)

| | | Category of Mis-Targeting Indices | | | | | |
|---|---|---|---|---|---|---|---|
| Characteristics of Schools | | Low A Low B N=31 | Low A High B N=15 | High A Low B N=45 | High A High B N=65 | | All Title I Schools N=156 |
| **Minority Concentration** | | | | | | | |
| Principal's Est. (% in 1975-76) | Mean | 19.3 | 8.6 | 47.5 | 14.1 | ** | 24.2 |
| | SD | 24.9 | 11.4 | 40.5 | 23.3 | | 32.4 |
| % Non-White (1976-77) | Mean | 22.3 | 9.7 | 49.8 | 14.6 | ** | 25.8 |
| | SD | 27.9 | 13.2 | 41.7 | 23.8 | | 33.8 |
| **Poverty Concentration** | | | | | | | |
| Principal's Est. (% in 1975-76) | Mean | 32.1 | 15.9 | 59.0 | 31.5 | * | 38.1 |
| | SD | 22.3 | 9.8 | 29.2 | 21.4 | | 27.1 |
| % Poor/AFDC (1976-77) | Mean | 21.9 | 12.0 | 45.8 | 22.9 | ** | 28.3 |
| | SD | 18.3 | 7.4 | 23.5 | 18.3 | | 22.4 |
| % Free Lunch (1976-77) | Mean | 36.5 | 20.7 | 67.2 | 36.6 | ** | 43.9 |
| | SD | 28.5 | 14.6 | 30.7 | 24.4 | | 30.6 |
| **Achievement Level** | | | | | | | |
| % At or Below 25th Percentile | Mean | 28.5 | 13.3 | 45.5 | 21.5 | ** | 29.0 |
| | SD | 9.1 | 4.6 | 13.2 | 10.2 | | 15.4 |
| Student Mobility % Moved From or To | Mean | 16.9 | 17.6 | 28.8 | 17.9 | * | 20.8 |
| | SD | 11.5 | 18.1 | 28.7 | 16.4 | | 20.7 |
| Extent of Parent/ Comm. Involvement | Mean | 41.4 | 36.1 | 43.9 | 40.3 | | 41.1 |
| | SD | 15.6 | 9.3 | 14.8 | 14.5 | | 14.4 |
| Enrollemnt in Grade 1 thru 6 | Mean | 317.2 | 359.7 | 326.5 | 281.1 | | 308.9 |
| | SD | 179.7 | 179.5 | 178.8 | 204.1 | | 190.0 |
| Title I Students in Grade 1 thru 6 | Mean | 36.2 | 45.9 | 115.9 | 57.9 | ** | 73.3 |
| | SD | 24.3 | 33.3 | 89.5 | 48.4 | | 65.9 |

* indicates significant differences among the four groups of Title I schools at or below the .05 level (before adjustment for design effects).

** indicates significant differences at or below .01 level.

Table 10. Characteristics of Title I Schools by Categories of Mis-Targeting Indices ('A' Indicates Percentage of Regular-Achievers in Title I Programs, and 'B' Indicates Percentage of Title I Students Who Are Regular-Achieving)

Table 10b. (Above the 50th Percentile as Regular-Achieving, A: Above 5% is High; B: Above 15% is High)

| Characteristics of Schools | | Category of Mis-Targeting Indices<br>Low A Low B N=58 | <br>Low A High B N=12 | <br>High A Low B N=39 | <br>High A High B N=47 | | All Title I Schools N=156 |
|---|---|---|---|---|---|---|---|
| Minority Concentration | | | | | | | |
| Principal's Est. (% in 1975-76) | Mean | 21.1 | 4.2 | 48.3 | 13.3 | ** | 24.2 |
| | SD | 28.1 | 7.3 | 38.9 | 23.7 | | 32.4 |
| % Non-White (1976-77) | Mean | 23.2 | 5.9 | 51.6 | 12.8 | ** | 25.8 |
| | SD | 30.0 | 7.9 | 40.0 | 23.4 | | 33.8 |
| Poverty Concentration | | | | | | | |
| Principal's Est. (% in 1975-76) | Mean | 35.3 | 15.9 | 59.1 | 29.6 | ** | 38.1 |
| | SD | 24.6 | 12.3 | 28.3 | 21.1 | | 27.1 |
| % Poor/AFDC (1976-77) | Mean | 24.2 | 9.8 | 46.6 | 22.8 | ** | 28.3 |
| | SD | 19.1 | 10.9 | 22.5 | 18.9 | | 22.4 |
| % Free Lunch (1976-77) | Mean | 40.8 | 14.0 | 69.0 | 34.5 | ** | 43.9 |
| | SD | 28.6 | 11.5 | 27.5 | 24.6 | | 30.6 |
| Achievement Level | | | | | | | |
| % At or Below 25th Percentile | Mean | 56.7 | 31.2 | 73.4 | 43.6 | ** | 55.0 |
| | SD | 13.3 | 7.7 | 12.9 | 13.9 | | 18.3 |
| Student Mobility % Moved From or To | Mean | 22.2 | 19.0 | 26.1 | 15.2 | | 20.8 |
| | SD | 20.8 | 12.7 | 25.9 | 15.9 | | 20.7 |
| Extent of Parent/ Comm. Involvement | Mean | 40.7 | 36.8 | 45.4 | 39.2 | | 41.1 |
| | SD | 13.6 | 10.4 | 15.6 | 14.9 | | 14.4 |
| Enrollemnt in Grade 1 thru 6 | Mean | 319.5 | 324.6 | 330.7 | 273.9 | | 308.9 |
| | SD | 185.5 | 114.5 | 158.3 | 231.0 | | 190.0 |
| Title I Students in Grade 1 thru 6 | Mean | 53.8 | 35.3 | 124.1 | 65.0 | ** | 73.3 |
| | SD | 40.1 | 18.0 | 90.8 | 51.4 | | 65.9 |

* indicates significant differences among the four groups of Title I schools at or below the .05 level (before adjustment for design effects).

** indicates significant differences at or below .01 level.

**Table 10. Characteristics of Title I Schools by Categories of Mis-Targeting Indices ('A' Indicates Percentage of Regular-Achievers in Title I Programs, and 'B' Indicates Percentage of Title I Students Who Are Regular-Achieving)**

Table 10c. (Based on Title I Selection and Achievement in Reading)
Above the 25th Percentile as Regular-Achieving
A: Above 10% is High, B: Above 45% is High

|  |  | Category of Mis-Targeting Indices |  |  |  |  |  |
|---|---|---|---|---|---|---|---|
| Characteristics of Schools Having TI Services in Reading |  | Low A Low B N=37 | Low A High B N=22 | High A Low B N=44 | High A High B N=51 |  | All Title I Schools N=154 |
| **Minority Concentration** |  |  |  |  |  |  |  |
| Principal's Est. | Mean | 28.3 | 3.9 | 40.8 | 15.9 | ** | 24.3 |
| (% in 1975-76) | SD | 31.2 | 5.7 | 39.6 | 26.1 |  | 32.6 |
| **Poverty Concentration** |  |  |  |  |  |  |  |
| % Poor/AFDC | Mean | 24.7 | 13.1 | 42.9 | 25.1 | ** | 28.4 |
| (1976-77) | SD | 20.4 | 13.8 | 23.5 | 19.4 |  | 22.5 |
| % Poor | Mean | 19.5 | 11.3 | 36.2 | 19.7 | ** | 23.2 |
| (1976-77) | SD | 16.8 | 13.1 | 21.0 | 17.3 |  | 19.7 |
| % Free Lunch | Mean | 45.3 | 16.0 | 65.9 | 36.5 | ** | 44.1 |
| (1976-77) | SD | 28.3 | 16.3 | 29.5 | 24.9 |  | 30.7 |
| **Reading Achievement Level** |  |  |  |  |  |  |  |
| No. At or Below | Mean | 118.8 | 41.4 | 135.6 | 67.6 | ** | 95.6 |
| 25th Percentile | SD | 90.0 | 26.7 | 102.3 | 65.8 |  | 87.4 |
| No. Bet. 26th and | Mean | 93.4 | 65.8 | 84.8 | 76.6 |  | 81.4 |
| 50th Percentile | SD | 52.5 | 38.1 | 45.2 | 63.6 |  | 53.2 |
| No. Above 50th | Mean | 135.5 | 200.7 | 79.8 | 141.2 | ** | 130.8 |
| Percentile | SD | 68.1 | 102.9 | 54.9 | 113.0 |  | 95.1 |
| Enrollment in | Mean | 349.8 | 309.1 | 301.4 | 286.9 |  | 309.3 |
| Grade 1 thru 6 | SD | 183.3 | 154.2 | 169.8 | 224.3 |  | 190.5 |
| **Title I Students in Reading (Grade 1-6)** |  |  |  |  |  |  |  |
| No. At or Below | Mean | 30.0 | 13.7 | 59.4 | 24.8 | ** | 34.4 |
| 25th Percentile | SD | 23.5 | 13.7 | 56.5 | 21.2 |  | 38.4 |
| No. Bet. 26th and | Mean | 9.8 | 12.0 | 24.4 | 23.7 | ** | 18.9 |
| 50th Percentile | SD | 5.7 | 8.5 | 19.0 | 16.6 |  | 15.9 |
| No. Above 50th | Mean | 1.9 | 4.8 | 7.4 | 13.3 | ** | 7.7 |
| Percentile | SD | 1.9 | 4.2 | 8.0 | 12.4 |  | 9.6 |
| Total No. in | Mean | 41.6 | 30.6 | 91.2 | 61.7 | ** | 60.9 |
| Title I Reading | SD | 28.2 | 24.6 | 80.9 | 44.5 |  | 56.9 |
| Student Mobility | Mean | 19.0 | 15.1 | 29.2 | 17.4 | * | 20.8 |
| % Moved From or To | SD | 12.6 | 10.9 | 28.8 | 18.6 |  | 20.7 |

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Table 10c. (Continued)

* indicates significant differences among the four groups of Title I Schools (that had Title I services in Reading) at or below the .05 level (before adjustment for design effects).
** indicates significant differences at or below the .01 level.

Table 10. Characteristics of Title I Schools by Categories of Mis-Targeting Indices ('A' Indicates Percentage of Regular-Achievers in Title I Programs, and 'B' Indicates Percentage of Title I Students Who Are Regular-Achieving)

Table 10d. (Based on Title I Selection and Achievement in Math)
Above the 25th Percentile as Regular-Achieving
A: Above 10% is High, B: Above 50% is High

| | | Category of Mis-Targeting Indices | | | | | |
|---|---|---|---|---|---|---|---|
| Characteristics of Schools Having TI Services in Math | | Low A Low B N=25 | Low A High B N=9 | High A Low B N=31 | High A High B N=27 | | All Title I Schools N=92 |
| Minority Concentration | | | | | | | |
| Principal's Est. | Mean | 15.2 | 14.4 | 57.0 | 19.9 | ** | 30.6 |
| (% in 1975-76) | SD | 19.9 | 25.4 | 41.0 | 25.6 | | 35.6 |
| Poverty Concentration | | | | | | | |
| % Poor/AFDC | Mean | 26.1 | 26.0 | 50.7 | 23.5 | ** | 33.6 |
| (1976-77) | SD | 17.5 | 18.6 | 25.1 | 18.1 | | 23.7 |
| % Poor | Mean | 20.5 | 19.4 | 42.9 | 19.3 | ** | 27.6 |
| (1976-77) | SD | 13.3 | 16.6 | 23.0 | 17.4 | | 21.3 |
| % Free Lunch | Mean | 43.6 | 31.4 | 72.4 | 39.7 | ** | 50.9 |
| (1976-77) | SD | 24.5 | 25.7 | 30.7 | 23.4 | | 30.5 |
| Math Achievement Level | | | | | | | |
| No. At or Below | Mean | 90.3 | 53.4 | 138.2 | 60.0 | ** | 93.9 |
| 25th Percentile | SD | 63.3 | 33.6 | 104.0 | 55.8 | | 82.4 |
| No. Bet. 26th and | Mean | 87.3 | 74.2 | 89.0 | 66.6 | | 80.5 |
| 50th Percentile | SD | 49.6 | 31.7 | 57.6 | 53.7 | | 52.5 |
| No. Above 50th | Mean | 145.8 | 170.1 | 87.6 | 124.4 | ** | 122.3 |
| Percentile | SD | 79.0 | 55.4 | 51.5 | 83.7 | | 74.7 |
| Enrollment in | Mean | 327.5 | 305.9 | 317.6 | 252.0 | | 299.9 |
| Grade 1 thru 6 | SD | 185.9 | 92.6 | 191.4 | 173.9 | | 177.7 |
| Title I Students in Math (Grade 1-6) | | | | | | | |
| No. At or Below | Mean | 16.8 | 6.1 | 54.6 | 18.4 | ** | 29.0 |
| 25th Percentile | SD | 11.7 | 3.4 | 52.7 | 17.8 | | 37.3 |
| No. Bet. 26th and | Mean | 6.2 | 6.3 | 26.0 | 18.1 | ** | 16.4 |
| 50th Percentile | SD | 5.2 | 3.8 | 25.4 | 13.3 | | 18.5 |
| No. Above 50th | Mean | 2.2 | 5.1 | 12.5 | 15.9 | ** | 10.0 |
| Percentile | SD | 2.2 | 3.0 | 13.8 | 16.6 | | 13.2 |
| Total No. in | Mean | 25.2 | 17.6 | 93.1 | 52.4 | ** | 55.3 |
| Title I Math | SD | 17.5 | 8.3 | 89.9 | 42.7 | | 64.4 |
| Student Mobility | Mean | 26.7 | 21.0 | 27.9 | 16.8 | | 23.6 |
| % Moved From or To | SD | 24.5 | 24.4 | 29.4 | 16.1 | | 24.4 |

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Table 10d. (Continued)

* indicates significant differences among the four groups of Title I Schools (that had Title I Services in Math) at or below the .05 level (before adjustment for design effects).

** indicates significant differences at or below the .01 level.

Table 11. Use of Teacher Recommendation in CE Selection by School's Percentages of Regular-Achievers Enrolled in Title I Programs

Table 11a. (Scoring Above the 25th Percentile as Regular-Achieving)

| Use of Teacher's Recommendation in CE Selection | | Percentage of Regular-Achievers Enrolled in Title I Programs | | | | All Title I Schools |
|---|---|---|---|---|---|---|
| | | 0-5% | 6-10% | 11-20% | 21-100% | |
| Used | Percent | 94.4% | 92.9% | 71.4% | 61.1% | 74.4% |
| | Number | 17 | 26 | 40 | 33 | 116 |
| Not Used | Percent | 5.6% | 7.1% | 28.6% | 38.9% | 25.6% |
| | Number | 1 | 2 | 16 | 21 | 40 |
| Total | Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| | Number | 18 | 28 | 56 | 54 | 156 |

Table 11b. (Scoring Above the 50th Percentile as Regular-Achieving)

| Use of Teacher's Recommendation in CE Selection | | Percentage of Regular-Achievers Enrolled in Title I Programs | | | | All Title I Schools |
|---|---|---|---|---|---|---|
| | | 0-5% | 6-10% | 11-20% | 21-100% | |
| Used | Percent | 75.7% | 85.7% | 59.1% | 63.6% | 74.4% |
| | Number | 53 | 36 | 13 | 14 | 116 |
| Not Used | Percent | 24.3% | 14.3% | 40.9% | 36.4% | 25.6% |
| | Number | 17 | 6 | 9 | 8 | 40 |
| Total | Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| | Number | 70 | 42 | 22 | 22 | 156 |

Table 12. Use of Teacher Recommendation in CE Selection by School's Category of Mis-Targeting Indices ('A' Indicates Percentage of Regular-Achievers in Title I Programs, and 'B' Indicates Percentage of Title I Students Who are Regular-Achieving)

Table 12a. (Scoring Above the 25th Percentile as Regular-Achieving)

| Use of Teacher's Recommendation in CE Selection | | Category of Mis-Targeting Indices | | | | All Title I Schools |
|---|---|---|---|---|---|---|
| | | Low A Low B | Low A High B | High A Low B | High A High B | |
| Used | Percent | 93.5% | 93.3% | 60.0% | 70.8% | 74.4% |
| | Number | 29 | 14 | 27 | 46 | 116 |
| Not Used | Percent | 6.5% | 6.7% | 40.0% | 29.2% | 25.6% |
| | Number | 2 | 1 | 18 | 19 | 40 |
| Total | Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| | Number | 31 | 15 | 45 | 65 | 156 |

Table 12b. (Scoring Above the 50th Percentile as Regular-Achieving)

| Use of Teacher's Recommendation in CE Selection | | Category of Mis-Targeting Indices | | | | All Title I Schools |
|---|---|---|---|---|---|---|
| | | Low A Low B | Low A High B | High A Low B | High A High B | |
| Used | Percent | 74.1% | 83.3% | 69.2% | 76.6% | 74.4% |
| | Number | 43 | 10 | 27 | 36 | 116 |
| Not Used | Percent | 25.9% | 16.7% | 30.8% | 23.4% | 25.6% |
| | Number | 15 | 2 | 12 | 11 | 40 |
| Total | Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| | Number | 58 | 12 | 39 | 47 | 156 |

Table 13. Geographical Distribution of Title I Schools by School's Percentage of Regular-Achievers Enrolled in Title I Programs

Table 13a. (Scoring Above the 25th Percentile as Regular-Achieving)

| Geographical Region | | Percentage of Regular-Achievers Enrolled in Title I Programs | | | | All Title I Schools |
|---|---|---|---|---|---|---|
| | | 0-5% | 6-10% | 11-20% | 21-100% | |
| New England | Percent | 5.6% | 14.3% | 10.7% | 3.7% | 8.3% |
| | Number | 1 | 4 | 6 | 2 | 13 |
| Metropolitan Northeast | Percent | 5.6% | 14.3% | 12.5% | 11.1% | 11.5% |
| | Number | 1 | 4 | 7 | 6 | 18 |
| Mid-Atlantic | Percent | | 7.1% | 8.9% | 18.5% | 10.9% |
| | Number | | 2 | 5 | 10 | 17 |
| Southeast | Percent | 27.8% | 10.7% | 7.1% | 13.0% | 12.2% |
| | Number | 5 | 3 | 4 | 7 | 19 |
| North Midwest | Percent | 11.1% | 17.9% | 8.9% | 11.1% | 11.5% |
| | Number | 2 | 5 | 5 | 6 | 18 |
| South Central | Percent | 11.1% | 14.3% | 10.7% | 7.4% | 10.3% |
| | Number | 2 | 4 | 6 | 4 | 16 |
| Central Midwest | Percent | 5.6% | | 14.3% | 14.8% | 10.9% |
| | Number | 1 | | 8 | 8 | 17 |
| North Central | Percent | 16.7% | 7.1% | 10.7% | 7.4% | 9.6% |
| | Number | 3 | 2 | 6 | 4 | 15 |
| Pacific Southwest | Percent | 11.1% | 3.6% | 3.6% | 11.1% | 7.1% |
| | Number | 2 | 1 | 2 | 6 | 11 |
| Pacific Northwest | Percent | 5.6% | 10.7% | 12.5% | 1.9% | 7.7% |
| | Number | 1 | 3 | 7 | 1 | 12 |
| Total | Percent | 100.2% | 100.0% | 99.9% | 100.0% | 100.0% |
| | Number | 18 | 28 | 56 | 54 | 156 |

Table 13. Geographical Distribution of Title I Schools by School's Percentage of Regular-Achievers Enrolled in Title I Programs

Table 13b. (Scoring Above the 50th Percentile as Regular-Achieving)

| Geographical Region | | Percentage of Regular-Achievers Enrolled in Title I Programs | | | | All Title I Schools |
|---|---|---|---|---|---|---|
| | | 0-5% | 6-10% | 11-20% | 21-100% | |
| New England | Percent | 7.1% | 14.3% | 4.5% | 4.5% | 8.3% |
| | Number | 5 | 6 | 1 | 1 | 13 |
| Metropolitan Northeast | Percent | 8.6% | 21.4% | | 13.6% | 11.5% |
| | Number | 6 | 9 | | 3 | 18 |
| Mid-Atlantic | Percent | 5.7% | 9.5% | 22.7% | 18.2% | 10.9% |
| | Number | 4 | 4 | 5 | 4 | 17 |
| Southeast | Percent | 15.7% | 4.8% | 22.7% | 4.5% | 12.2% |
| | Number | 11 | 2 | 5 | 1 | 19 |
| North Midwest | Percent | 14.3% | 4.8% | 9.1% | 18.2% | 11.5% |
| | Number | 10 | 2 | 2 | 4 | 18 |
| South Central | Percent | 10.0% | 14.3% | 9.1% | 4.5% | 10.3% |
| | Number | 7 | 6 | 2 | 1 | 16 |
| Central Midwest | Percent | 11.4% | 7.1% | 18.2% | 9.1% | 10.9% |
| | Number | 8 | 3 | 4 | 2 | 17 |
| North Central | Percent | 10.0% | 11.9% | 9.1% | 4.5% | 9.6% |
| | Number | 7 | 5 | 2 | 1 | 15 |
| Pacific Southwest | Percent | 7.1% | | 4.5% | 22.7% | 7.1% |
| | Number | 5 | | 1 | 5 | 11 |
| Pacific Northwest | Percent | 10.0% | 11.9% | | | 7.7% |
| | Number | 7 | 5 | | | 12 |
| Total | Percent | 99.9% | 100.0% | 99.9% | 99.8% | 100.0% |
| | Number | 70 | 42 | 22 | 22 | 156 |

Table 14. Geographical Distribution of Title I Schools by Categories of Mis-Targeting Indices ('A' Indicates Percentage of Regular-Achievers in Title I Programs, and 'B' Indicates Percentage of Title I Students Who Are Regular-Achieving)

Table 14a. (Scoring Above the 25th Percentile as Regular-Achieving, A: Above 10% is High, B: Above 45% is High)

| | | Category of Mis-Targeting Indices | | | | |
|---|---|---|---|---|---|---|
| Geographical Region | | Low A Low B | Low A High B | High A Low B | High A High B | All Title I Schools |
| New England | Percent | 9.7% | 13.3% | 4.4% | 9.2% | 8.3% |
| | Number | 3 | 2 | 2 | 6 | 13 |
| Metropolitan Northeast | Percent | 9.7% | 13.3% | 17.8% | 7.7% | 11.5% |
| | Number | 3 | 2 | 8 | 5 | 18 |
| Mid-Atlantic | Percent | | 13.3% | 6.7% | 18.5% | 10.9% |
| | Number | | 2 | 3 | 12 | 17 |
| Southeast | Percent | 22.6% | 6.7% | 15.6% | 6.2% | 12.2% |
| | Number | 7 | 1 | 7 | 4 | 19 |
| North Midwest | Percent | 19.4% | 6.7% | 11.1% | 9.2% | 11.5% |
| | Number | 6 | 1 | 5 | 6 | 18 |
| South Central | Percent | 9.7% | 20.0% | 11.1% | 7.7% | 10.3% |
| | Number | 3 | 3 | 5 | 5 | 16 |
| Central Midwest | Percent | 3.2% | | 8.9% | 18.5% | 10.9% |
| | Number | 1 | | 4 | 12 | 17 |
| North Central | Percent | 6.5% | 20.0% | 6.7% | 10.8% | 9.6% |
| | Number | 2 | 3 | 3 | 7 | 15 |
| Pacific Southwest | Percent | 9.7% | | 13.3% | 3.1% | 7.1% |
| | Number | 3 | | 6 | 2 | 11 |
| Pacific Northwest | Percent | 9.7% | 6.7% | 4.4% | 9.2% | 7.7% |
| | Number | 3 | 1 | 2 | 6 | 12 |
| Total | Percent | 100.2% | 100.0% | 100.0% | 100.1% | 100.0% |
| | Number | 31 | 15 | 45 | 65 | 156 |

Table 14. Geographical Distribution of Title I Schools by Categories of Mis-Targeting Indices ('A' Indicates Percentage of Regular-Achievers in Title I Programs, and 'B' Indicates Percentage of Title I Students Who Are Regular-Achieving)

Table 14b. (Scoring Above the 50th Percentile as Regular-Achieving,
A: Above 5% is High, B: Above 15% is High)

| Geographical Region | | Category of Mis-Targeting Indices | | | | All Title I Schools |
|---|---|---|---|---|---|---|
| | | Low A Low B | Low A High B | High A Low B | High A High B | |
| New England | Percent | 8.6% | | | 17.0% | 8.3% |
| | Number | 5 | | | 8 | 13 |
| Metropolitan Northeast | Percent | 10.3% | | 20.5% | 8.5% | 11.5% |
| | Number | 6 | | 8 | 4 | 18 |
| Mid-Atlantic | Percent | 3.4% | 16.7% | 10.3% | 19.1% | 10.9% |
| | Number | 2 | 2 | 4 | 9 | 17 |
| Southeast | Percent | 17.2% | 8.3% | 17.9% | 2.1% | 12.2% |
| | Number | 10 | 1 | 7 | 1 | 19 |
| North Midwest | Percent | 13.8% | 16.7% | 5.1% | 12.8% | 11.5% |
| | Number | 8 | 2 | 2 | 6 | 18 |
| South Central | Percent | 8.6% | 16.7% | 15.4% | 6.4% | 10.3% |
| | Number | 5 | 2 | 6 | 3 | 16 |
| Central Midwest | Percent | 10.3% | 16.7% | 10.3% | 10.6% | 10.9% |
| | Number | 6 | 2 | 4 | 5 | 17 |
| North Central | Percent | 8.6% | 16.7% | 5.1% | 12.8% | 9.6% |
| | Number | 5 | 2 | 2 | 6 | 15 |
| Pacific Southwest | Percent | 8.6% | | 12.8% | 2.1% | 7.1% |
| | Number | 5 | | 5 | 1 | 11 |
| Pacific Northwest | Percent | 10.3% | 8.3% | 2.6% | 8.5% | 7.7% |
| | Number | 6 | 1 | 1 | 4 | 12 |
| Total | Percent | 99.7% | 100.1% | 100.0% | 99.9% | 100.0% |
| | Number | 58 | 12 | 39 | 47 | 156 |

2A3

Basic Skill Total, quantile and median definition

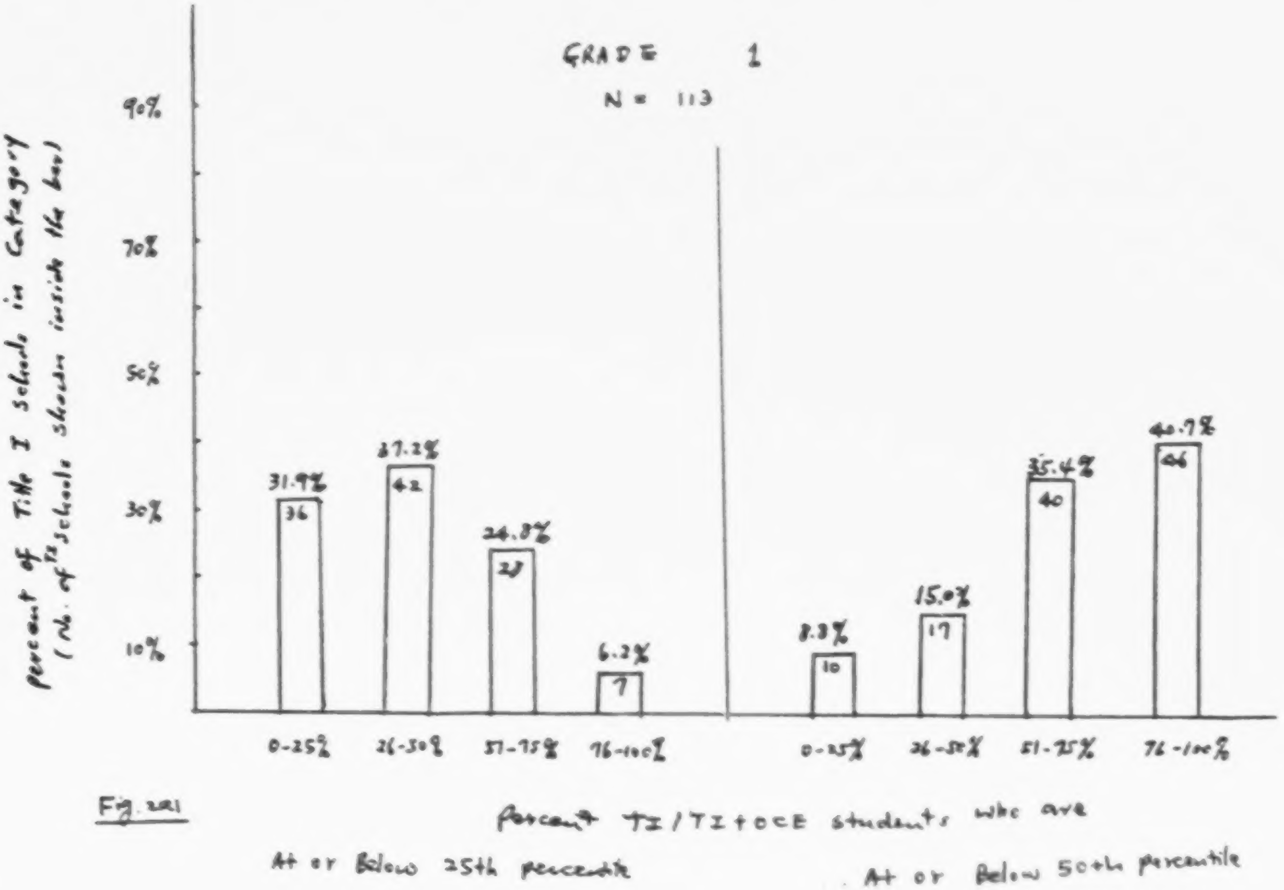

Fig. 2a1

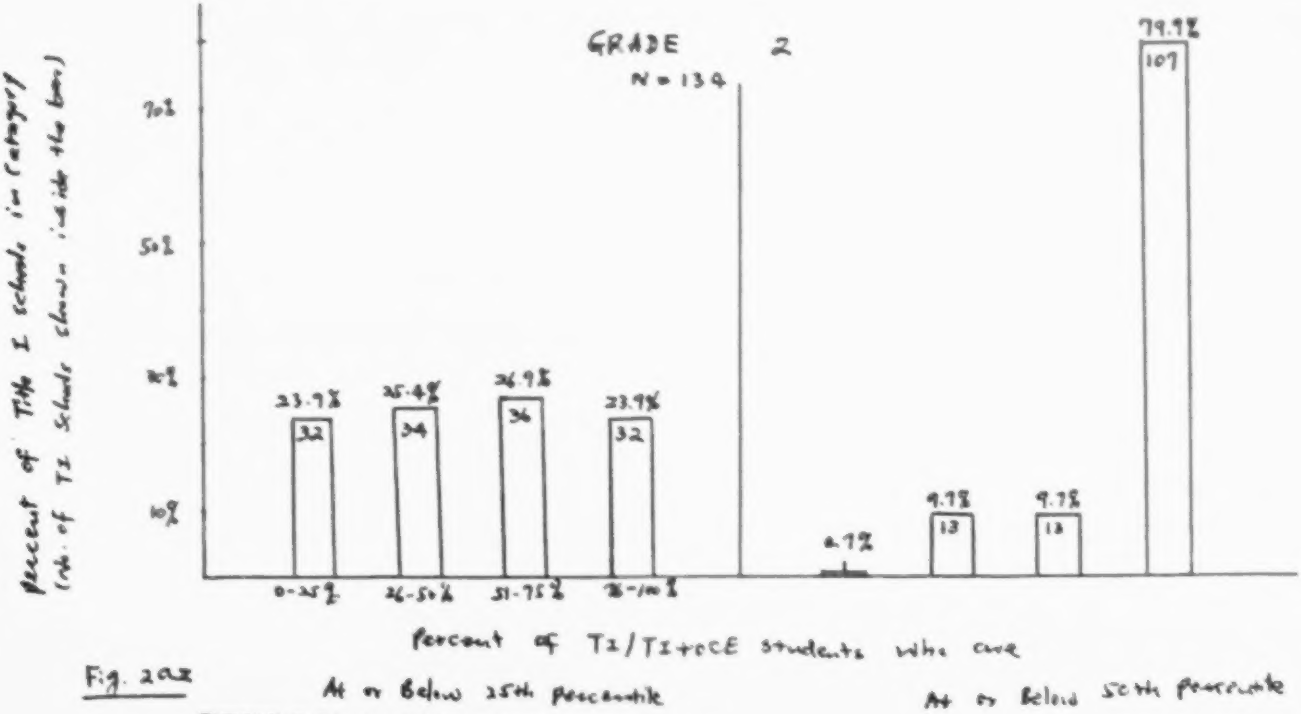

Fig. 2a2

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2A3 Basic Skill Total, quantile and Median definition 10/14/85

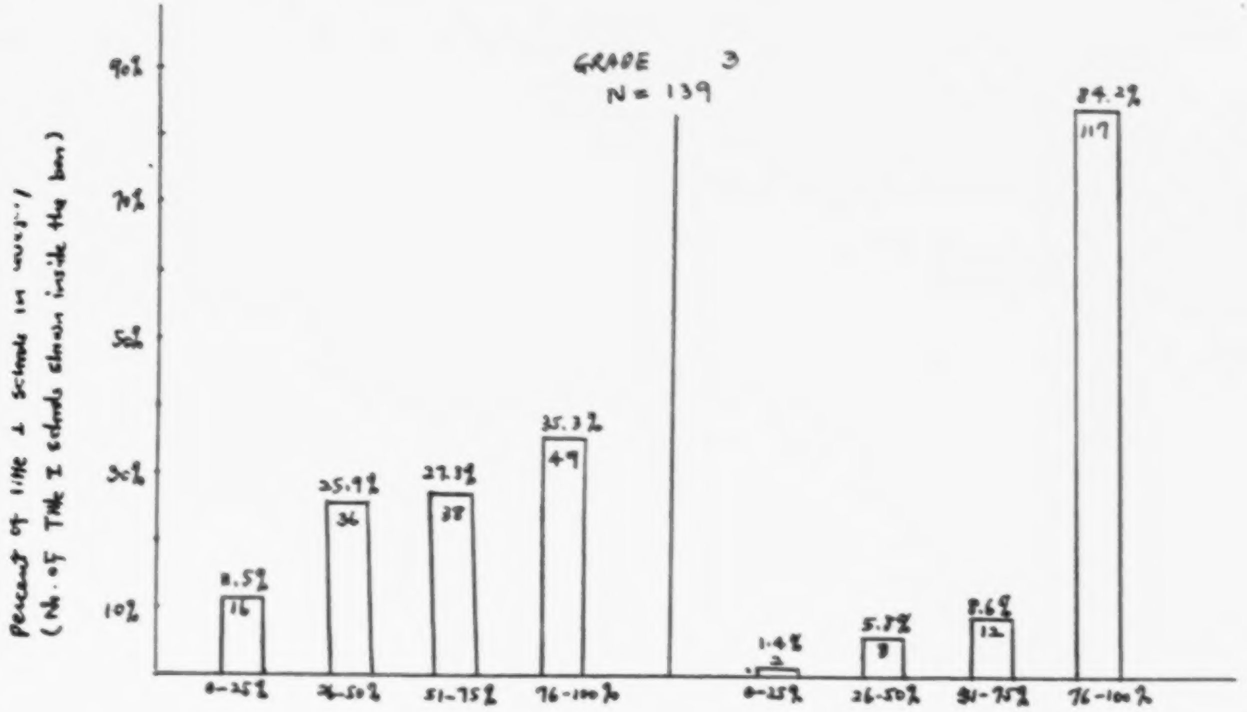

Fig. 2a3 Percent of TI/TI+OCE students who are

At or Below 25th percentile At or Below 50th Percentile

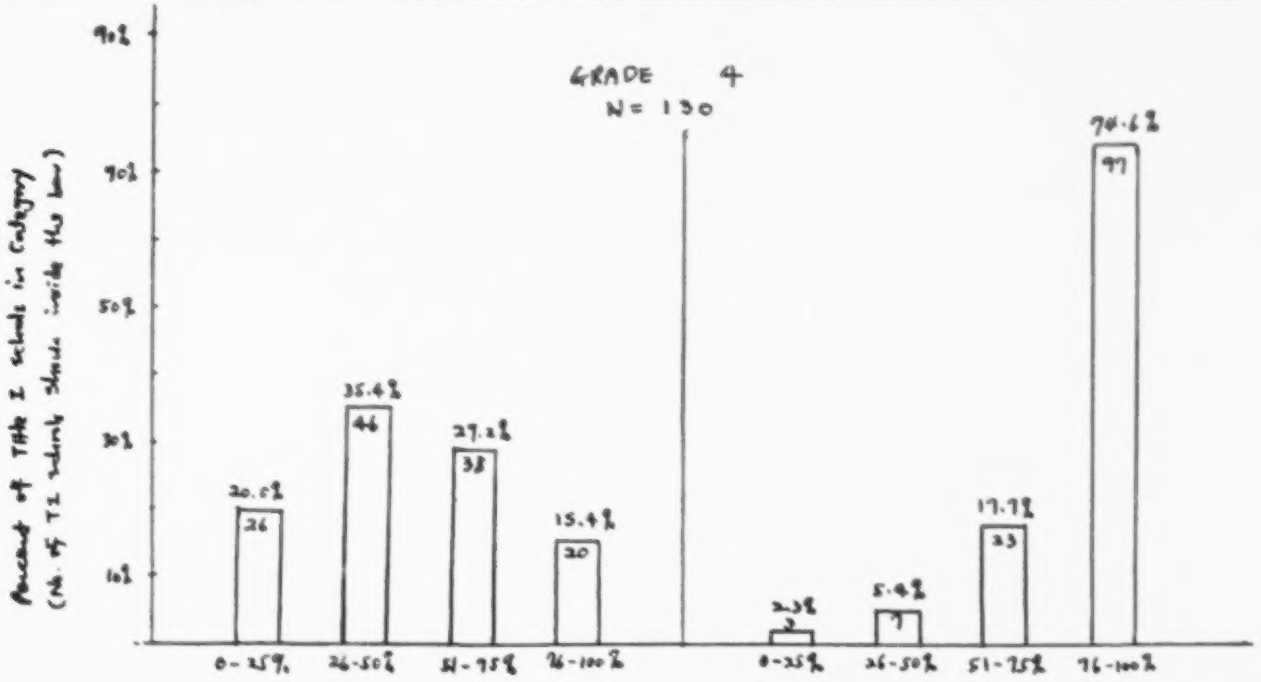

Fig. 2a4. Percent of TI/TI+OCE students who are

At or Below 25th percentile At or Below 50th percentile

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2A3 Basic Skill Total, quartile and Median definition [illegible]

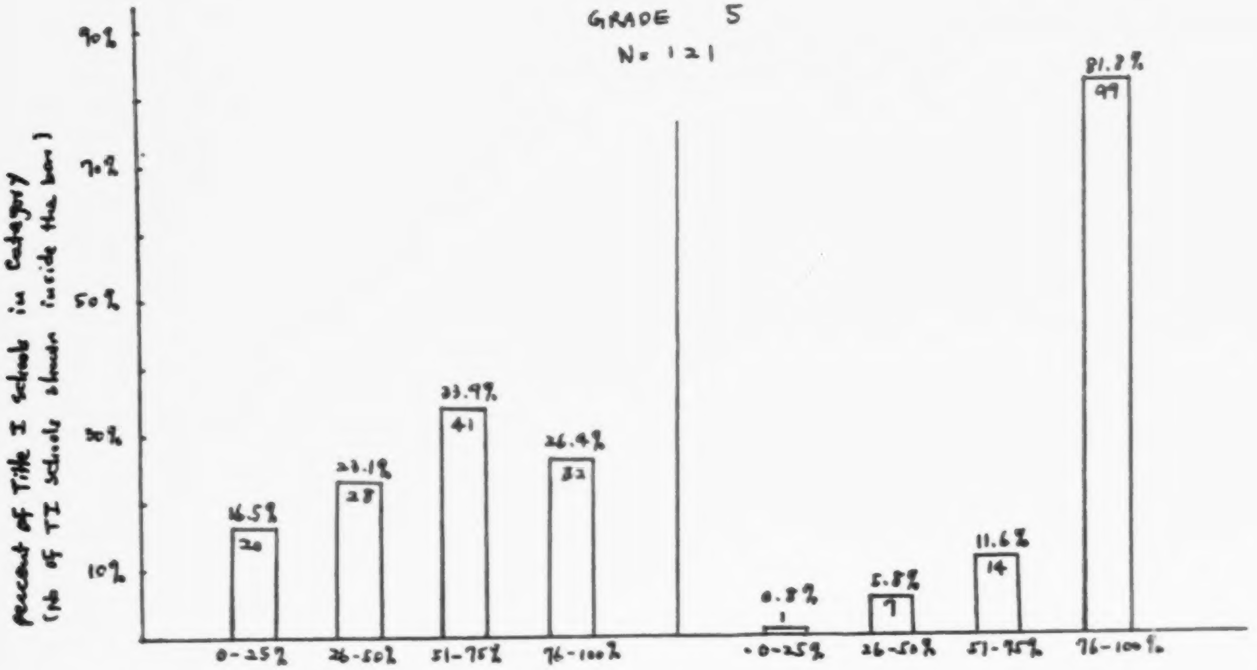

Fig. 2A5. Percent of TI/TI+OCE students who are
At or Below 25th percentile At or Below 50th percentile

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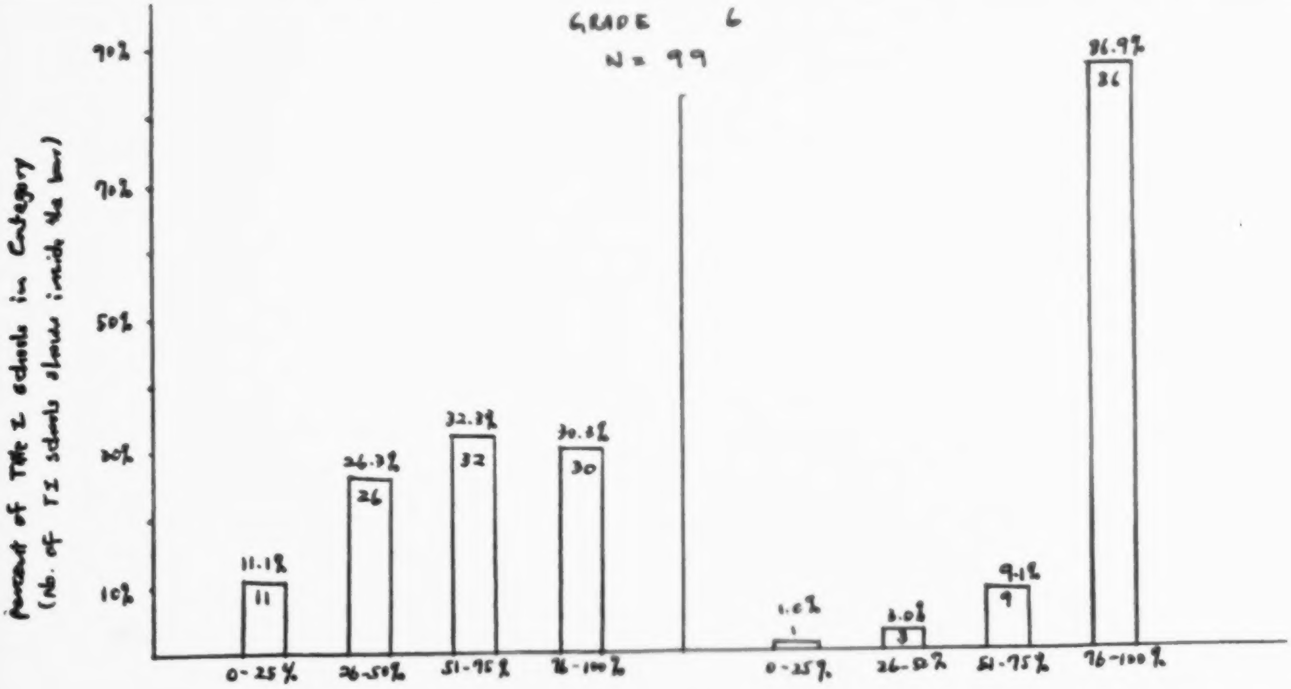

Fig. 2A6. Percent of TI/TI+OCE students who are
At or Below 25th percentile At or Below 50th percentile

2A3

Basic Skill Total, Quartile and Median Definition

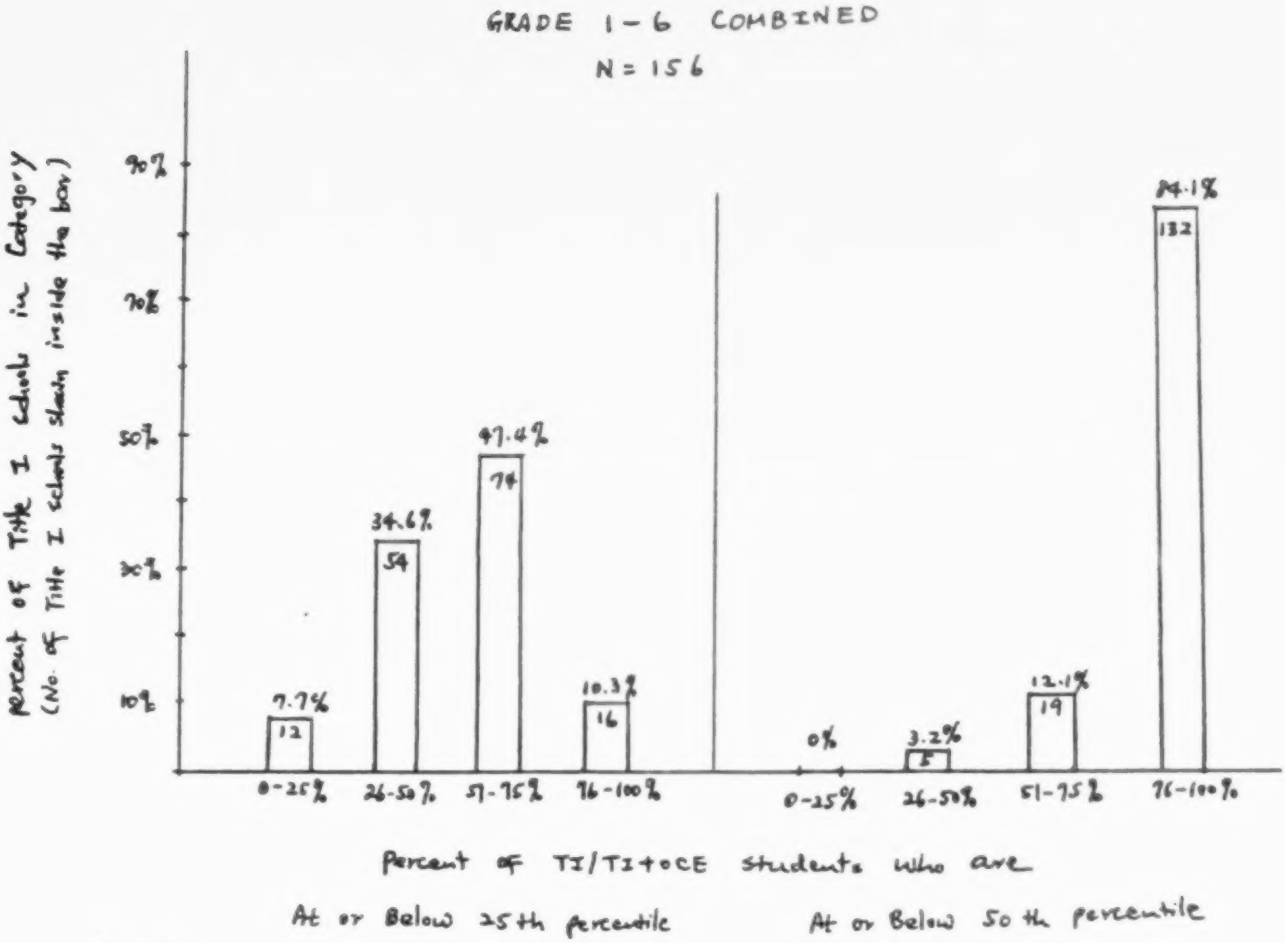

Fig. 2b.

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2A3 Basic Skill Total, Quartile and Median Definitions 10/14/85

Category of Targeting index :

A = % of TI/TI+OCE who are Low-Achieving (at or below 25th %ile as low achieving : > 50% is High, at or below 50th %ile as Low achieving : ≥ 80% is High, Otherwise Low)

B = % of Low-achieving students who are enrolled in TI/TI+OCE (at or below 25th %ile as Low-achieving : > 30% is High, Otherwise Low at or below 50th %ile as Low-achieving : > 25% is High, Otherwise Low)

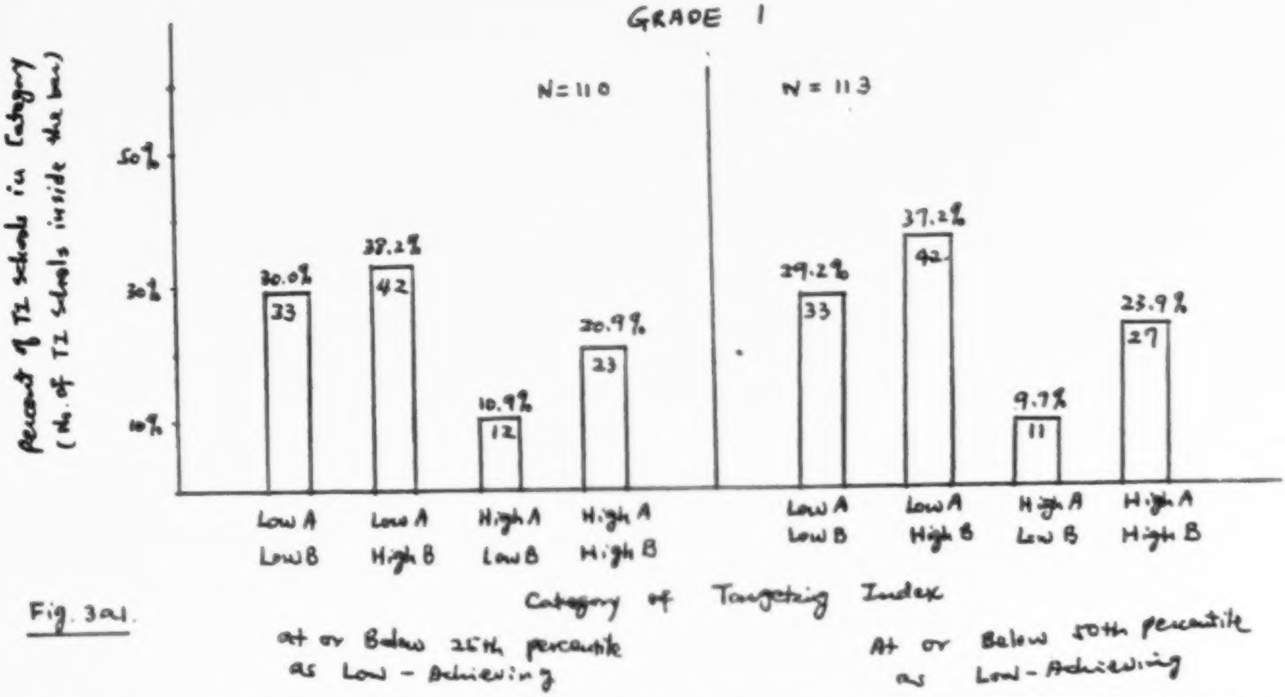

Fig. 3a1.

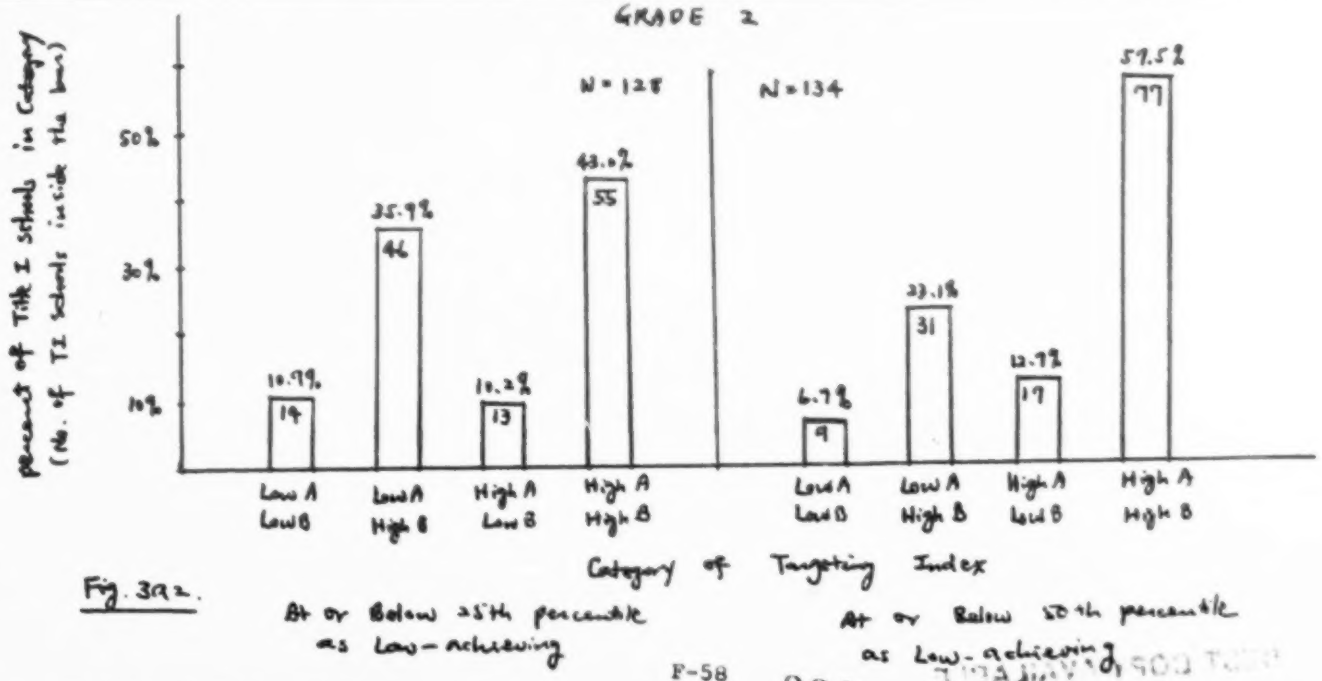

Fig. 3a2.

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[illegible]

Category of Targeting Index

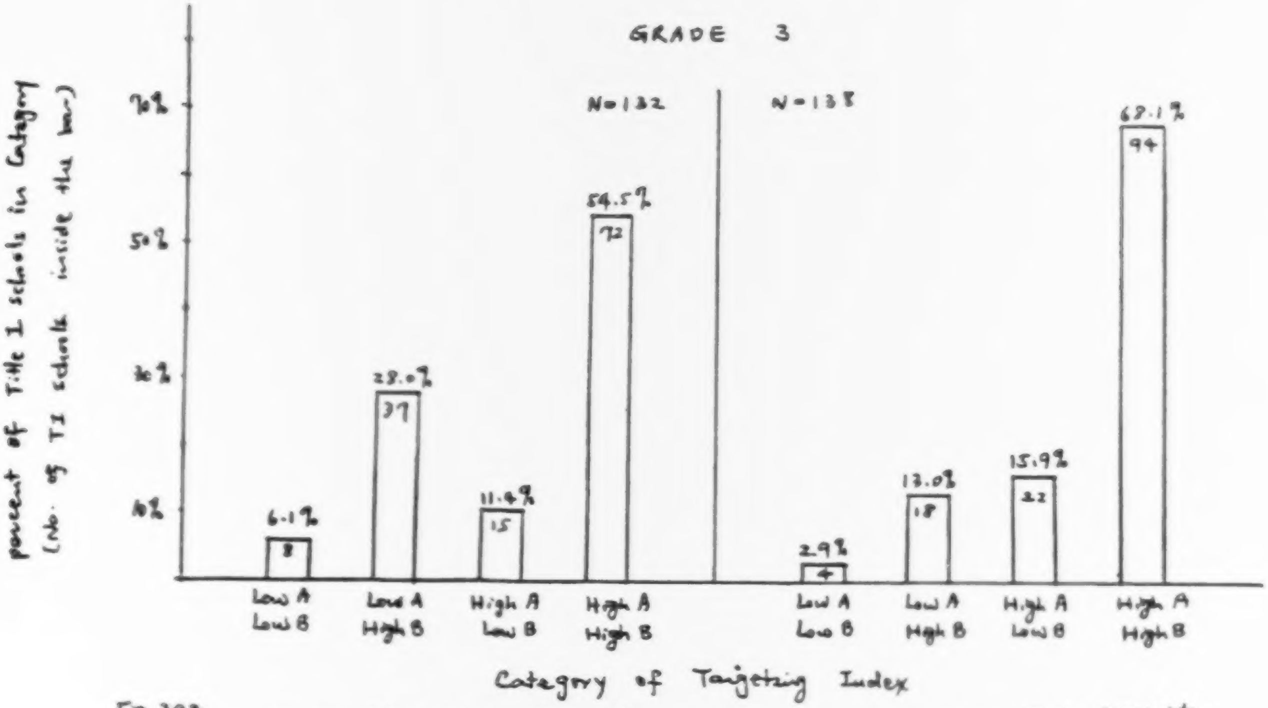

Fig 3a8.

At or Below 25th percentile as Low-Achieving

At or Below 50th percentile as Low-Achieving

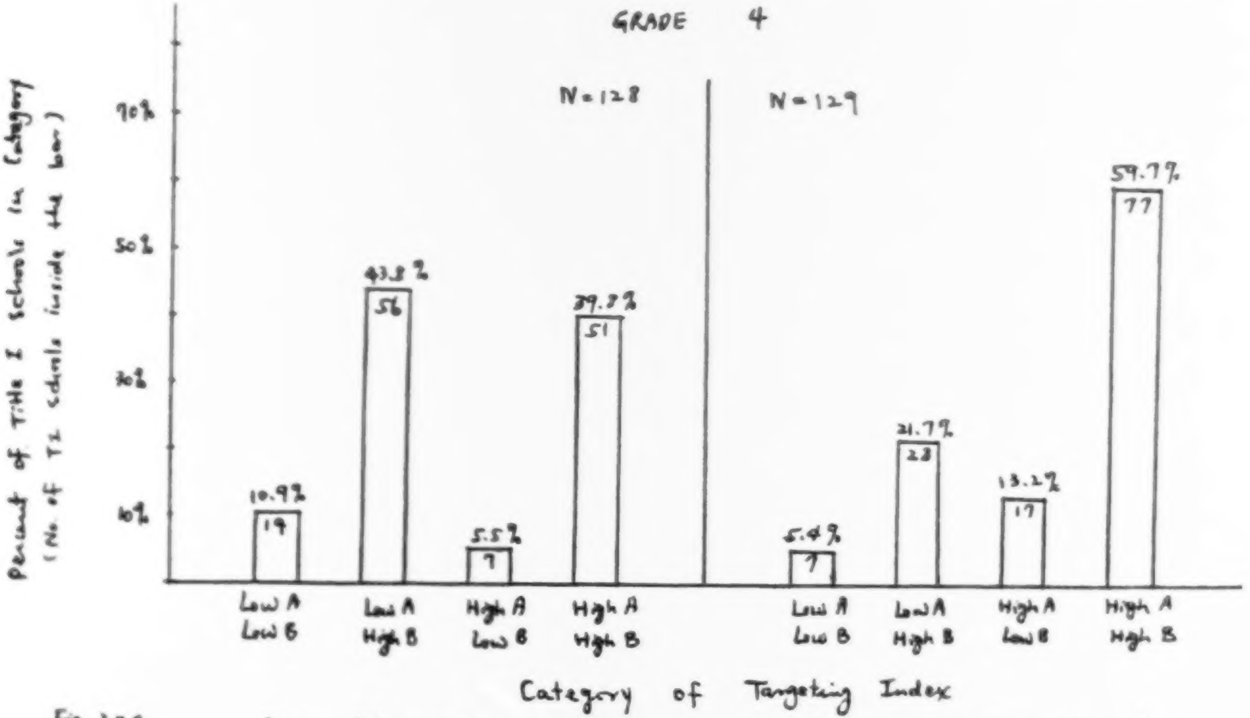

Fig. 3a9

At or Below 25th percentile as Low-Achieving

At or Below 50th percentile as Low-Achieving

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2A3

Basic Skill Total, quantile and Median definition

Category of Targeting Index

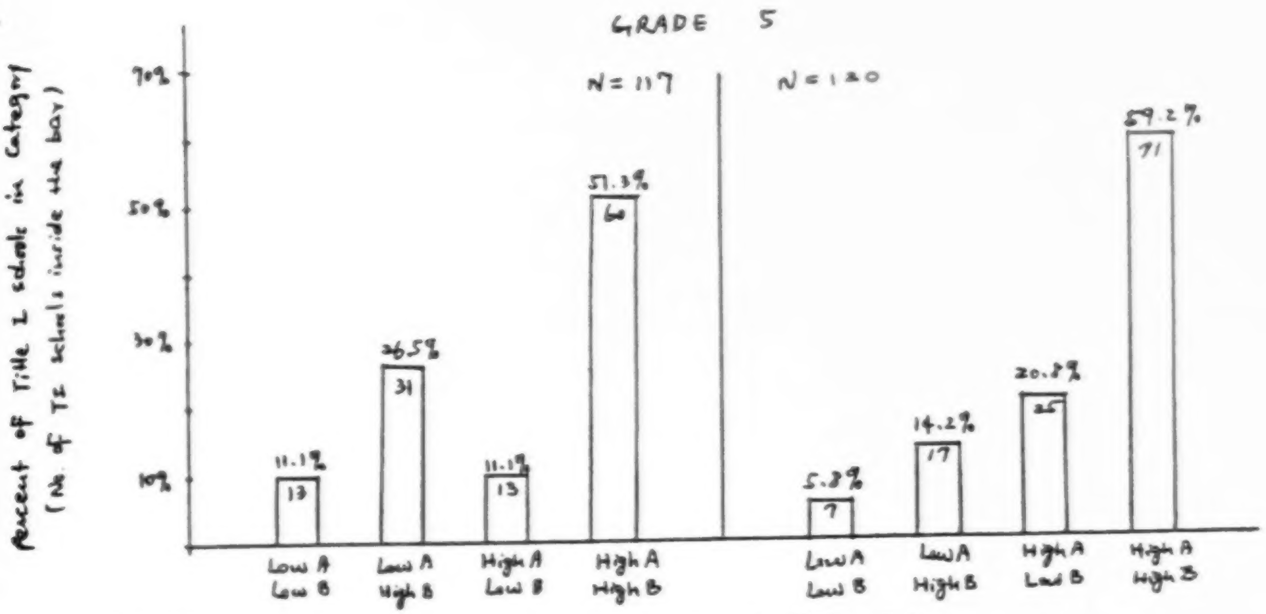

Fig. 3a5.

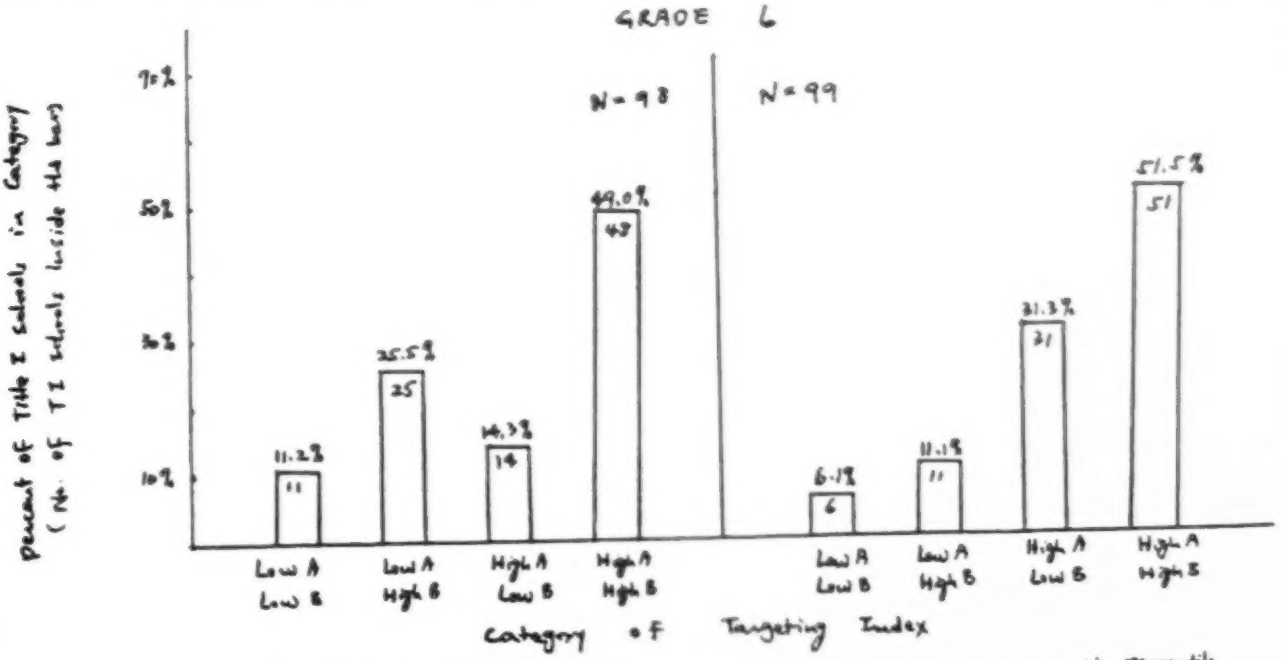

Fig. 3a6.

Category of Targeting Index

A = % of TI/TI+OCE who are Low-Achieving
(at or below 25th percentile as Low-Achieving : > 50% is High, Else Low;
at or below 50th percentile as Low-Achieving : > 80% is High, Else Low)

B = % of Low-Achieving students who are enrolled in TI/TI+OCE
(at or below 25th percentile as Low-Achieving : > 30% is High, Else Low;
at or below 50th percentile as Low-Achieving : > 25% is High, Else Low.)

GRADE 1-6 COMBINED

N = 156

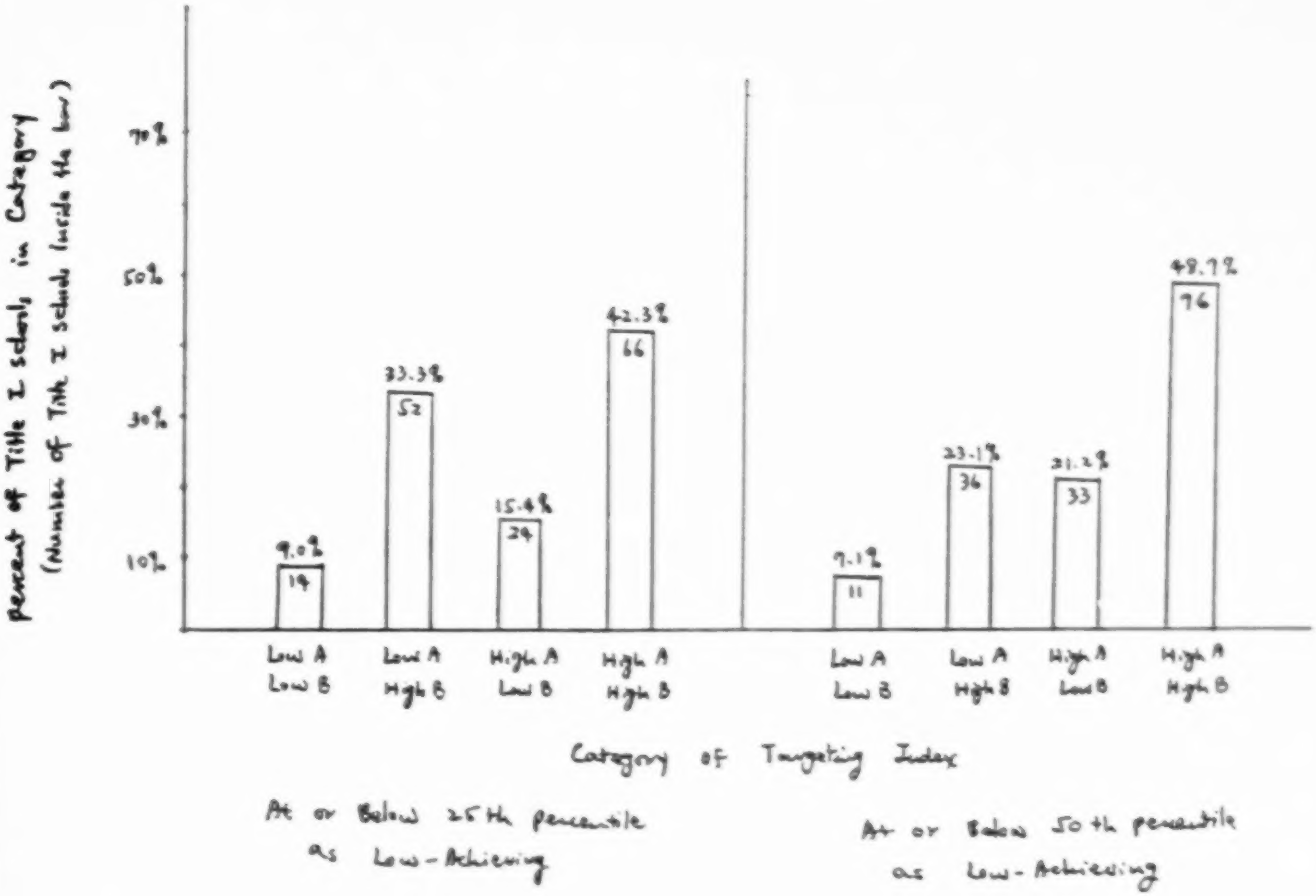

Fig. 36

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## Part 3

# Reanalyses of District Practices Study

# Targeting Data

Ann Milne
Decision Resources

The following tables present reanalyses of data from the District Practices Study (DPS) designed to determine whether the percent of eligible or served schools was related to (1) criteria for school selection and (2) district size.

Tables 1 and 2 present the results of these analyses based on a subsample of the total DPS sample. Only this subsample received questions related to goals and to the kind of school selection criteria used.

Table 1 examines the relationship between the percent of schools in a district identified as Title I and the district's choice of data source for identifying such schools. It should be noted here that the percents listed are served, not eligible, schools (the latter cannot be determined from the DPS data), and they may be receiving services based not only on their identification by the particular data source, but also by any number of the "special" eligibility provisions - no wide variance, the grandfather clause, etc. Given this caveat, it should be noted that the relationship is nevertheless significant. However, the high number of schools served in districts using Census numbers may reflect the fact that those districts are small, and that smaller districts serve more schools overall (see Table 2).

Table 2 shows the relationship between percent of schools with Title I services and data source used holding constant district size. The percent of schools served varies by district size, with, as noted, the smallest districts serving the largest percent of schools. Also, within the small district category, we find that the number of schools served varies according to data sources used. Even within this size category, (that is, with district five partially controlled), use of Census data continues to be related to the greatest number of schools served.

Also of interest here are the absolute percents of schools served by districts of various sizes. In 1981-82, it was still necessary that schools be above the district average on the particular poverty criterion used to be deemed eligible. It is clear that the smaller the district the more able they appear to have been to use the flexibility options built into the Title I school eligibility and targeting provisions.

Various points about this use of the DPS data are in order. First, all districts with illogical student population ratios exceeding 1 -- such as the ratio of served students to total enrollment -- were eliminated from the sample for all analyses, whether or not the analyses dealt with these specific ratios. One exception is the ratio of number of educationally disadvantaged students in Title I schools or attendance areas to public school students in these schools or areas. Because of the possibility of large numbers of disadvantaged students attending private schools, this ratio was allowed to range to a maximum of 1.33 (to reflect a maximum of 25 percent of district students in private schools).

Elimination of districts reduced the effective sample size of the subsample by about one-third. This produces subsample sizes of approximately 210.

Noted on each table are either significance levels, or the fact that relationships were non-significant. Significance tests are based on analyses using scaled weights -- that is, weights whose sum equals the appropriate sample N. However, values in the tables are from analyses weighted to reflect population totals.

## Table 1

### Percent of Schools with Title I Programs in the District Related to Particular Data Sources School Year 1981-82

| Data Source | Number of Districts | Percent Schools in Title I* |
|---|---|---|
| Free Lunch Only | | 63.4 |
| AFDC Only | | 56.1 |
| Free Lunch and AFDC | | 64.6 |
| Free Lunch, AFDC, Census | | 49.5 |
| Census Only | | 87.8 |
| Other | | 73.7 |
| Total | | 66.8 |

* Differences are significant at p  .0006.

Source: District Practices Study; subsample, weighted to population estimates.

Table 2

### Percent of Schools with Title I Programs in the District Related to Particular Data Sources, Separately by District Size School Year 1981-82

| Data Source | Small* (2,500) | Medium (2,500– 9,999) | Large (10,000) |
|---|---|---|---|
| Free Lunch Only | 60.9 | 69.8 | 45.3 |
| AFDC Only | 76.7 | 46.3 | 42.2 |
| Free Lunch and AFDC | 68.9 | 64.8 | 33.8 |
| Free Lunch, AFDC, Census | 45.8 | 55.9 | 57.9 |
| Census Only | 90.0 | 84.6 | 56.8 |
| Other | 82.1 | 63.7 | 47.6 |
| Total* | 72.4 | 64.4 | 45.1 |
| Number of Districts in Analysis: | | | |

* Differences are significant at p .0001.

Source: District Practices Study; subsample, weighted to population estimates.

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